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AN

HISTORICAL AND PRACTICAL

TREATISE

ON

THE INTERNAL USE

OF THE

HYDRO-CYANIC (PRUSSIC) ACID.

AN

HISTORICAL AND PRACTICAL TREATISE

ON

THE INTERNAL USE

OF THE

HYDRO-CYANIC (PRUSSIC) ACID,

IN

PULMONARY CONSUMPTION,

AND OTHER DISEASES OF THE CHEST;

AS WELL AS IN SEVERAL COMPLAINTS

ATTENDED BY

GREAT NERVOUS IRRITATION, OR ACUTE PAIN;

WITH

Full Directions for the Preparation and Administration of that Medicine; and a preliminary descriptive account of the principal Diseases in which it has been employed—illustrated by numerous CASES.

SECOND EDITION,

Greatly Enlarged.

BY

A. B. GRANVILLE, M. D. F.R.S. F.L.S. M.R.I.

Physician in ordinary to H. R. H. the Duke of Clarence;

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THE PRESENT EDITION

IS

INSCRIBED

TO

WILLIAM HAMILTON, ESQ. F.R.S. F.A.S.

One of His Majesty's Under Secretaries of State

FOR

FOREIGN AFFAIRS;

IN TOKEN OF

GRATITUDE, FRIENDSHIP, AND REGARD

FOR

HIS PRIVATE VIRTUES,

PUBLIC DESERTS,

AND

MANY ACTS OF KINDNESS

TO THE

AUTHOR.

PREFACE.

THE present may be considered as a new work, and the fourth attempt which the author has made, in the course of five years, to establish the claims of a new and powerful remedy to the attention of the medical profession in this country. To the original facts and observations respecting this important subject contained in the first edition, consisting of less than one hundred pages, the author has been enabled to add, since the period of its publication and rapid circulation in 1819, a vast mass of information collected from various sources,

rendering it incumbent upon him to new-model the work, and extend it to its present size. He trusts that in so doing, he shall not be taxed with having unnecessarily swelled his *pamphlet* into a *volume*; and that when reference shall have been made to the additional matter of practical utility contained in the present edition, the scope he had in view in publishing it, will not be mistaken. On the subject of the Hydro-cyanic Acid, much is now known; for much has lately been written respecting it, in various countries in Europe; but the author is not aware of the existence of any work, either English or Foreign, which compared with the present, or even with his former volume, offers an equally compre-

hensive view of the subject considered in all its bearings, particularly those of a more immediate interest to the medical profession. As a matter of fact, the author may be permitted to assert this without being accused of presumption; but how far he has done his duty with regard to the composition and style of the work itself, remains to be determined by an indulgent public. He has endeavoured to lay before them, every, even the most minute, circumstance connected with the subject of his research: and in order to render the information he thus brings forward, on a point of so much importance, more available to the public; he has accompanied his "cases" with elucidatory observations, and introduced

them by short descriptive delineations of the diseases to which the Prussic Acid has been applied as a remedy.

Throughout the following pages, the author has studied to be clear, rather than elegant; and his aim has been to write for popular reading, rather than for the mere consideration of his professional brethren.

8, *Saville Row*,
30*th October*, 1820.

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ERRATA CORRIGE.

Page 11, line 10, for *paper*, read Treatise.
Page 15, — 7, for *Pelletier*, read Roubiquet.
Page 20, — 10, for 70,583, read .70583.
Page 31, — 17, for *resoluble*, read insoluble.
Page 91, — 2, for *seem*, read seems.
Page 100, — 12, for *Ungnad*, read Unguad.
Page 106, — 20, for *and we are*, read *but* we are.
Page 107, — 1, for *arrested*, read, did not succeed in arresting.
Page 119, — 17, for *seem*, read seems.
Page 123, — 10, for 1885, read 1805.
Page 148, — 20, for *natura*, read natural.
Page 165, — 1, for *de*, read des.
Page 246, — 1, the monosyllable *of*, has dropt out.
Page 257, — 15, for *lay*, read lie.
Page 284, — 21, for *away*, read way.
Page 303, — 15, for *experimentor*, read experimenter.
Page 324, — 1, for *October*, read May.
Page 334, — 1, for *Accoucher*, read Accoucheur.

PART FIRST.

AN

HISTORICAL, CHEMICAL AND PHYSIOLOGICAL

ACCOUNT

OF THE

HYDRO-CYANIC (PRUSSIC) ACID.

PRELIMINARY REMARKS.

SINCE the former edition of the following observations, several publications have appeared in Italy, France, and Germany, on the Prussic Acid, considered either as a chemical or a medical agent; and the attention which, on three distinct occasions,* I endeavoured to excite in the medical profession of this country, to the subject of this medicine, has now happily been converted into a warm sentiment of interest for its success.

When I ventured, not longer than a year ago, to express a hope that the Prussic Acid

* See "Some observations on the action of the Prussic Acid." London Medical Repository, vol. iv. 1815. Also "On the use of the Prussic Acid, in the treatment of certain diseases of the chest, &c. Translated, with some preliminary observations, from the French Memoir of Dr. Magendie. Journal of Science, vol. iv. 1818. And "Further Observations on the Hydro-Cyanic Acid, in Complaints of the Chest, &c." 1819. 1st Edition.

would be found to supply a more rational mode of treating, if not of curing, that most insidious and destructive disease "pulmonary consumption," I was not, as events have since shewn, indulging in the chimeras of a revery; but following the dictates of intimate conviction, derived from induction and practical observations. Yet even the most sanguine advocates of this new medicine could scarcely have expected, at the period at which I was writing, that the testimonials of its beneficial effects in the disease just mentioned, as well as in several others, to which I first extended its application, would, *in so short a time,* become, not only so numerous, but so conclusive. To find another article in the Materia Medica so favourably circumstanced, would be a difficult task; still more difficult would it be to think, that any candid and unprejudiced practitioner could henceforward refuse to place his faith in the medicinal properties of this substance.

Having been the first to prescribe the Prussic

Acid in this country, and to call the attention of the profession to its medicinal powers, I stand, in a manner, pledged to them for any further information, which I may be able to collect respecting it; and with this I am happy to say, that my experience for the last twelve months, has supplied me to a degree surpassing even my best expectations.

It must, at the same time, be gratifying to me to have it in my power to add to my own, the result of the practice of those medical gentlemen who, either at my suggestion, or in consequence of the former publication of this work, have employed the Prussic Acid, and have since furnished me, very kindly, with their observations. This forms a mass of accumulated evidence, which to withhold from the public would be a dereliction of duty on my part; while by laying it before them in the present form, an answer is at once given to the numerous applications which often reach me from medical practitioners, and other persons in the country,

for more ample information on the subject; and for directions how to procure and administer the acid, in the various diseases for which it has been recommended.

In order the better to acquaint my readers with the complete history of this recent addidition to our Materia Medica, it will not be inexpedient to give some account of the discovery, and chemical nature of the Prussic Acid; the experiments which have been made with it; and the analogy which led to its administration as a medicine. If to these facts be added a minute enumeration of its effects on the human system, and a detailed statement of those cases in which it has been used, both successfully and unsuccessfully; the public will have been put in possession of every circumstance connected with the subject of this valuable remedy.

But before I proceed to execute this part of my task, I think it necessary to state, that although the present edition will be found much

enlarged with new matter and new facts; the corrections which experience and the suggestions of friendly critics seemed to dictate, have not been lost sight of—nay, several have been adopted. The opportunities which I have had, during the last autumn, of personally consulting some of the most eminent physicians in France, Prussia, Switzerland, and Italy, on the subject of the Prussic Acid, and of witnessing the effects of this medicine administered under their direction in some of the public hospitals, have, I hope, enabled me to present to my readers, a more accurate account of its nature and properties than I was before able to do; while at the same time, they have furnished me with the means of rectifying an incorrect statement respecting the person to whom the public stand indebted for the first introduction of this powerful and useful agent into medical practice. I had indeed, on a former occasion,* asserted that Borda, one of the pro-

* See the paper in the Repository already alluded to.

fessors at the University of Pavia, had, as long since as the year 1807, administered the Prussic Acid in inflammatory diseases; but in translating Dr. Magendie's paper in 1818, and thus, once more, calling the attention of the medical profession in this country to the use of that medicine, I had almost attributed to the latter gentleman the sole honor of this great improvement in therapeutics. It will however be found in its proper place, that such must not be the impression on the reader's mind, for nothing can be farther from reality than this assumption on my part; since, if it should be proved that other physicians had several years ago, not only administered the Prussic Acid in the same diseases for which Dr. Magendie has since recommended it; but also, that they had published the nature and result of their practice, in this respect, in a manner to command the public attention; the claims of the celebrated French physiologist just mentioned, to the merit of having added a valuable remedy to the

few which possess that character in the hand of the practitioner, must naturally be surrendered.

The various works also, as well as insulated observations, which have appeared on the Prussic Acid, since the first edition of the present essay, could not but supply us with additional materials towards rendering its history and monography more complete. Of these I have availed myself without hesitation, particularly when I found that the authors deserved implicit confidence, or that they related curious and important facts, however contrary these might appear to the conclusions which I had drawn in favor of the medicine under consideration.

SECTION FIRST.

Chemical History of the Hydro-cyanic, or Prussic Acid.

The name of *Prussic Acid* was given by Guyton de Morveau* to a particular substance, which he supposed to be the colouring principle of *Prussian blue.* Every one knows that the Prussian blue is a pigment of a fine dark blue colour, discovered by Diesbach, of Berlin, more than a hundred years ago, by the accidental mixture of a solution of green vitriol (sulphate of iron,) with an alkali highly impregnated with animal matter. The precise process of preparing this substance as a colour, was published in the Philosophical Transactions for 1724, by Woodward, and may be thus briefly stated. Dried bullock's blood and good pearl ash are calcined together in a crucible,

* See "A Biographical Account of the late Baron de Morveau," by Dr. Granville, printed in the Journal of the Royal Institution. Vol. iii. 1817.

and the contents afterwards boiled in a certain quantity of water, and the liquor filtered; a solution of green sulphate of iron is next added, when a bluish-green deposit is formed, which by the further addition of muriatic acid, is instantly changed from a bluish-green to a deep blue. This is the Prussian blue, or in other words, "a combination of iron with a particular substance contained in the blood," and separated from it, in the first instance, by the potash. It is this substance, thus furnished by the blood, which has been called *Prussic Acid* by Morveau, but the real nature of which was not properly ascertained, until 1815, when M. Gay Lussac of the Royal Institute of France, in a most admirable memoir on the subject, which, to use Sir H. Davy's expressions, is replete with the most elaborate and ingenious researches, published the real chemical constitution of this substance.*

* Recherches sur l'Acide Prussique, présentées à l'Institut, le 18 Septembre, 1815, par M. Gay Lussac. *Extrait des Annales de Chimie, Août*, 1815.

The Swedish chemist, Scheele, was the first who succeeded in separating the particular acid in question from the Prussian blue, so as to enable him to study its nature and properties. Several other chemists, namely, Geoffroi, Menou, Brown, Macquer,* and Bergman,† had preceded him with their inquiries into this interesting matter, and others had followed him; but his process of obtaining the Prussic Acid was considered the best, down to the period when Gay Lussac shewed that the acid, so prepared, was far from being pure; and proposed another method, by which he obtained an acid, endowed with such active and energetic properties, that physiologists have felt no hesitation in ranking it amongst the most virulent poisons. This method however being unfit for the preparation of the Prussic Acid to be employed as a medicine, and for which I have proposed the name of Medicinal Prussic Acid,

* Mem. de l'Acad. des Sciences, 1752.

† Dissertation sur les attractions electives.

a distinction since adopted by Magendie and others, need not be mentioned in this place. It will be sufficient to give the formula employed by Vauquelin, and recently adopted by the Faculty of medicine at Paris, in their Pharmacopoeia.* The Prussic Acid, prepared according to his directions, or to those of Scheele, is a safe and valuable medicine in the hands of a cautious practitioner. The formula will be found in another part of this paper.

Having obtained from the Prussian blue, the Prussic Acid, in its purest state, it was to be expected that so acute a chemist, as Gay Lussac, would not be long in discovering its real nature. This has indeed been the case; and we now know that it consists of a particular gaseous and highly inflammable combination of carbone and azote, acidified by the addition of hydrogene.†

* Codex Medicamentarius, sive Pharmacopœia Gallica, jussu Regis optimi editus a Facultate Medica Parisiensi, anno, 1818.

† So far back as 1784, Brugnatelli had obtained by distilling a

To the former of these combinations, Gay Lussac has given the name of *cyanogene* (producing blue); and to the combination of cyanogene with hydrogene, that is, to the acid formerly called *prussic*, he applies the distinctive appellation of *hydro-cyanic*. By an accurate analysis, he found the *cyanogene* to be composed of

Carbone 44.39, or 46.19
Azote 51.71, or 53.81
} in every 100 parts,

and the *hydro-cyanic* acid to consist of these same proportions of carbone and azote, with the addition of 3.90 of hydrogene, or, what amounts to the same thing of $\frac{1}{2}$ a volume of cyanogene with $\frac{1}{2}$ a volume of hydrogene.

Before Gay Lussac had published his inquiries on this interesting subject, M. Porrett had presented to the Royal Society, * a memoir con-

solution of Prussiate of potash, an elastic fluid highly inflammable, burning with a blue flame, and consisting, as he thought, partly of hydrogene and partly of azote; or as they were then called, *inflammable* and *septic* air.

* See Philosop. Transact. for 1815.

taining certain experiments made with a view to determine the composition of Prussiate of Mercury and Prussic Acid. The result of his analysis gives as the composition of the salt:

Prussic Acid	13.2
Red oxide of Mercury	86.8
	100.0

and the following as the elements of the acid:

Azote	40.7	or in Atoms	1
Carbon	24.8		2
Hydrogen	34.5		8
	100.0		11

On a reference to the analysis of Gay Lussac, the errors of M. Porrett's operations and results will be readily detected. The name of Chyazic Acid (composed of the first letters of the words carbon, hydrogene, and azote, with the syllable *ic* added to them) was proposed by the latter chemist as a substitute for that of Prussic Acid, but the new name has never been generally adopted.

But although M. Porrett's analysis of the Prussic Acid be not consistent with what has since been found to be its real nature; he has a just claim to the discovery of a very important fact connected with this question, namely, that of an elementary combination of Prussic Acid and Iron, constituting a new acid; which when combined with bases forms what have been denominated *triple prussiates*.

The habits, and chemical arrangement of this *ferrated* Prussic Acid, are not however as yet distinctly understood; and although M. Pelletier has more recently paid considerable attention to this new modification of the Prussic Acid, we do not think that its existence has been fairly made out. But this is not the place for a chemical disquisition, and we will therefore proceed to other matters.

To those who are anxious for a more complete chemical history of the Prussic Acid and its compounds, I would strongly recommend the perusal of the article *Acide Prussique*, in

the *Encyclopedie Methodique*, written by Morveau in 1788; the work of Coullon, published in 1819, as well as his former inaugural dissertation of 1808; the memoirs of Gay Lussac and Vauquelin, and lastly those of Le Maistre, translated and inserted in Thomson's Annals, and of Pelletier, which will be found in one of the numbers of the *Annals de Chimie* for 1819. Besides these eminent chemists, several other philosophers have been engaged in inquiries upon this subject. It will scarcely be necessary to mention the names of Berthollet,* Fourcroy,† Vauquelin, Thenard,‡ Proust,‖ Buck-holz, and Hermstadt, the latter of whom denominated this acid the Zootic Acid.

* Mem. de l'Academie des Sciences, 1787.
Chimie Statistique, vol. II.

† Système de Connaisances Chimiques, vol. IX.

‡ Traité de Chimie, 1818.

‖ Journal de Physique, and Annales de Chimie, vol. XI.

SECTION SECOND.

Method of procuring the Hydro-cyanic Acid for Medicinal purposes.

It has already been stated, that the acid in its purest state, as obtained by Gay Lussac, cannot be employed as a medicine. The processes which have hitherto been recommended for its preparation in a diluted state for medical purposes, are those of Scheele, (improved by La Planche,) and of Vauquelin. I shall therefore detail them both with minuteness, as it is of the utmost importance to be very precise, as well as cautious, in the manipulation of this powerful agent.

1. *Scheele's Process.*

To two ounces of Prussian blue, mixed with one ounce of red precipitate of mercury, six ounces of water are added, and the whole boiled for some minutes with constant agitation, when the blue colour entirely disappears, and

the mass becomes of a yellowish grey; it is then filtered, and the mass on the filter washed with a little hot water, which is added to the filtered liquor. Pour this upon one ounce and a half of clean iron-filings, and add three drachms of strong sulphuric acid. Shake the mixture well, and after allowing it to subside, pour off the liquor, put it into a retort, and distil the fourth part of it over into a well luted receiver, which will afterwards be found to contain the aqueous prussic acid, with an admixture of a little sulphuric acid, to be got rid of by means of barytic water. The improvement suggested by La Planche consists in limiting the first distillation to $\frac{1}{6}$ of the whole, and in rectifying the liquid thus obtained, by means of a gentle fire, over $\frac{1}{200}$ of carbonate of lime, drawing off, afterwards, $\frac{3}{4}$ only of the whole by a second distillation. By this method the acid is obtained at an uniform degree of concentration.

This process of Scheele has been variously explained by himself and other chemists, particularly by the authors of the paper on Prussic Acid inserted in the American Recorder. These explanations, however, are founded on false premises, and the following appears to be the true rationale. When iron-filings and sulphuric acid are added to the solution of *Prussian blue* and the *red precipitate* of mercury, water is decomposed, the reduced mercury combines with the base of the acid contained in the Prussian blue (cyanogene) and forms a cyanuret of mercury. This new combination is again torn asunder by the application of heat, and the cyanogene arising upon the nascent hydrogene of the decomposing water, forms hydro-cyanic vapours, which when absorbed by water in the receiver, constitute what has been called Prussic, or Hydro-cyanic Acid.

2. *Vauquelin's Process.*

Into a solution consisting of two ounces of cyanuret of mercury and sixteen ounces of water, pass as much sulphuretted-hydrogene gas as will serve to decompose the salt, leaving an excess of the gas. Filter the liquor to separate the sulphuret of mercury formed, and treat the filtered liquor with an excess of subcarbonate of lead. Shake the bottle until the excess of sulphuretted-hydrogene be absorbed. Filter once more, and the remaining liquor will be diluted hydro-cyanic acid, of a proper strength for medicinal purposes.*

3. *Magendie's Preparation.*

M. Magendie, in a second memoir on the Prussic Acid published last year, states that

* See at the end of this paper the Latin formula, taken from the Pharmacopœia of the Faculty of Medicine of Paris, 1818.†

† Mr. Garden, chemist, of Oxford-street, is the only person, to my knowledge, who has prepared the *medicinal Prussic Acid*, according to both the above methods; each of which is perfectly good for the purpose of practice: and I have satisfied myself, by

from experience he feels convinced that Scheele's process does not produce an acid endowed with medicinal properties sufficiently uniform, owing to the want of precision in the mode of operating. He, therefore, prefers, and now employs, Gay Lussac's acid, diluted with six times its volume, or eight times and a half its weight of distilled water.* The density of the pure hydro-cyanic acid at the temperature of 45°. being=70.583 (that of water being =1) it follows that the weight of the diluted acid will be=9.20583 since the weights of fluids are equal to their volumes multiplied by their densities. To this modification of the acid, however, there are objections which I shall state hereafter.

ocular demonstration, that every precaution was taken to ensure the accurate result of the operations.

* Read "Recherches Physiologiques et Cliniques, sur l'Emploi de l'Acide Prussique ou Hydrocyanique dans le traitement des maladies de Poitrine. Par F. Magendie, D.M. Paris 1819, p. 71.

4. *Apothecaries Company's Process.*

The demand for the acid having been considerable* since the publication of the first edition of this book, the Apothecaries Company have been induced to prepare it at their own laboratory. The formula they employ has been supplied by professor Brande, as he himself informed me, and is the following "Prussiate of Mercury (cyanuret) lb. j. muriatic (hydrochloric) acid lb. j. water lb. v. Draw off four pints and rectify through chalk." I have not had an opportunity of trying this acid, as I am satis-

* Mr. Brande informed me, four months ago, that about eight or nine quarts of the acid had been sold at the Apothecaries Hall, since April 1819; and I am told by Mr. Garden, that forty pints were disposed of, since the same period, in his shop, making a total of *nine hundred and twenty-eight* ounces: a quantity which, when we bear in mind that the acid has only been introduced as a medicine, in this country, about twelve months, and that it is prescribed in the dose, at most, of 16 or 20 drops in 24 hours, cannot but be considered as a proof of its having partly fulfilled the expectations of the Profession at large. A considerable quantity has been demanded for the West Indies, and is now preparing to be sent thither, where a previous trial has been made of the medicine on the Author's recommendation.

fied with that which Mr. Garden prepares for my patients; but I should conceive that the same objections, which exist respecting Scheele's process, may be urged likewise in the present case; for the acid cannot by this process, be obtained in a uniform and well-known degree of concentration. I know, besides, that the acid, thus prepared, is of a turbid yellowish colour, instead of being colourless and transparent; and that it deposits a considerable sediment, both which circumstances seem greatly to militate against its purity. There is moreover no novelty in the process itself, being in fact that of Gay Lussac, changing, unnecessarily, the proportions, and omitting two or three essential precautions, proposed as indispensible by that chemist in the preparation of the acid.

SECTION THIRD.

On the presence of Prussic Acid, in Animal, Vegetable, and Mineral Substances.

The prussic or hydro-cyanic acid is not found ready formed in the blood. This fluid does, indeed, contain the principles of the acid in question, but they require the presence of an alkali, to influence that peculiar attraction and combination of their molecules, which constitutes what has been called Prussic Acid. Fourcroy, and Thenard indeed, thought that a change, simply, in the proportions of the constituent elements of animal matter, sufficed to produce the hydro-cyanic acid; but this supposition has been found to be incorrect, and has been subverted by subsequent experiments.

On this point the reader will excuse my quoting from my notes, taken while attending a course of animal chemistry by Vauquelin at the Royal Garden of plants in Paris. "When animal substances are exposed to heat with

a mixture of alcalies-hydrogene, carburetted, and carbonic gas are obtained, besides a residue, which if *washed in water* will be found to contain Prussic Acid. The alcali therefore seems necessary to form the Prussic Acid by attracting together the principles of which it is constituted. Nor should it be forgotten, that no Prussic Acid will be produced unless the temperature of the mixture be raised to a red heat."

It is a fact, that when we wash the residue of animal matter in water, no Prussic Acid is found, unless alkalies be present at the same time; but on treating animal matter by heat, ammonia is formed, the presence of which is sufficient to promote the subsequent formation of Prussic Acid.

It is not improbable that the Prussic Acid is sometimes formed in certain diseases, in some of the fluids of the animal body. Mons. Coullon debates this question in his last work on this substance, and is inclined to adopt the

affirmative. He relates, among several others, the case of Dr. William Batt of Genoa, who collected the sediment of the urine of a female patient, aged seven years, which, when examined by Mojon the professor of chemistry, was found to be prussiate of iron, or prussian blue, a colour of which the sediment partook in a great measure. On another occasion M. Coullon himself found prussiate of iron in the menstrual fluid of a young lady having a decided lymphatic constitution.* It is a familiar observation with some medical men, that blood, in a state of decomposition, will impart a blue stain to linen. Fourcroy relates an interesting observation upon this subject. "A woman, aged about thirty years, laboured under a nervous and melancholic affection, in consequence of protracted grief. The principal seat of her suffering was in the epigastric

* Consult the "Recherches et Considerations Medicales, sur l'acide Hydro-cyanique, son radical, ses composés, et ses antidotes, &c." Par J. COULLON, D. M. 1 vol. 8vo. 1819.

region. She became extremely emaciated, with hectic fever, and a livid paleness of the skin; at last every thing seemed to announce universal languor, and a decomposition of the blood. After a few days, she was seized with a convulsive trembling and faintings, which were followed by the discharge of drops of blood from the edge of the eyelids, the nostrils, and the ears. The linen with which the blood was wiped was marked with spots of a beautiful blue." Fourcroy was witness of this fact; and he thinks himself warranted to conclude, from the experiments which he made in relation to this subject, that the blood, in this case, contained a true prussiate of iron.* The same writer, in his Animal Chemistry, sect. 8. order 2. art. 9. on the factitious animal acids, asserts that "nature sometimes gives birth to Prussic Acid during the

* Fourcroy. Annales de Chimie, tom. 1. pp. 66. quoted also by the Author of a Memoir on the Prussic Acid, printed in the 2d Vol. of the American Medical Recorder, published at Philadelphia.

process of putrefaction. If animal matter be boiled in nitric acid, a liquid is obtained which contains what has been called cyanogene; for if sulphate of iron be added, prussian blue is precipitated.

This acid has also been observed in a state of perfect formation in some vegetable substances, though in small quantities. Their smell fully indicates its presence. This is the case with the bitter almonds, the kernels of apricots, cherries, particularly the *cerasa juliana*, and several plumbs, the peach flower, peach and nectarine leaves, the leaves of the lauro-cerasus, &c. The bark of the *prunus padus*, or bird cherry-tree, when fresh taken, has a fragrant smell, and a bitter sub-astringent taste, somewhat similar to that of bitter almonds. Mr. Bergeman, an apothecary in Berlin, ascertained, in 1811, that this bark contained a notable quantity of Prussic Acid.

Water distilled from it, proved fatal to animals when given to them internally; and it is a curious fact, that superstitious people should have selected the berries of this shrub to form necklaces, which are hung round the neck of children to prevent fits, and allay cough from teething.*

We may instance, as the only mineral substance which has been found to contain Prussic Acid, the *fer azuré* of Haüy, having a fine blue colour.

It is also not improbable that the lapis-lazuli, which contains a small portion of iron, may hereafter offer, when accurately analyzed, another instance of a combination of the Prussic acid in the mineral kingdom.

* To Messrs. Schrader and Vauquelin are we indebted for the greater number of these observations with regard to the presence of Prussic Acid in vegetable substances See Annales de Chimie, vol. 44. and Scherer allgem : Journal der Chimie, c. x. p. 126.

SECTION FOURTH.

Physical Properties of the Hydro-cyanic Acid.

When prepared by the decomposition of muriatic acid and the cyanuret of mercury,* according to Gay Lussac's method, the prussic or hydro-cyanic acid has the following distinguishing properties:

1. At the common temperature it is liquid, colourless, and transparent, with a strong smell of bitter almonds, and a peculiar pungent bitter taste, at first bland and sweetish.

2. It is volatilized at 20° of the centigrade thermometer, boils at 26°, and at 15° below 0 it becomes concrete, and crystallizes in needles like nitrate of ammonia. Its extreme volatility is such, that when a drop of it is exposed to the air, on the end of a glass rod, it is rapidly crystallized. The same happens if a drop be suffered to fall on a sheet of paper.

* Formerly called *prussiate* of mercury, until Gay Lussac proved that the cyanogene alone is combined, in this instance, with the metal, and not the hydro-cyanic acid.

3. Its specific gravity is 0.70583: when in a concrete state it is only 0.600: while that of its vapour is 0.947.

4. It has an odour so strong and characteristic, that it produces almost immediate pain in the head, with deafness, unless *largely* diluted with air or water, as in the case of the acid prepared for medicinal purposes. In other respects the smell is the same as that of peach flowers or of bitter almonds.

5. Its tendency to assume the gazeous form is very considerable: it is decomposed by a high temperature, or by the contact of light, when carbonic acid, volatile alcali, and carburetted hydrogen gas are given out, a carbonaceous matter remaining behind.

6. When brought near to a body in a state of combustion, it instantly inflames and burns with a blue flame. Water and alcohol dissolve it readily.

In the memoir of Count Le Maistre of St. Petersbourg, to which I had occasion to allude

a few pages back, in speaking of certain novel combinations of the Prussic Acid, the author comes to the following conclusions. "Three different and well marked states in Prussic Acid, may be distinguished: 1. The pure acid, without oxygen and without iron, such as it exists in the soluble prussiate of iron; 2. The ferruginous Prussic Acid, without oxygen, as it exists in the prussiate of potash and in the green prussiates; 3. The ferruginous and oxygenated acid, such as it exists in all the blue precipitates."

If this be correct, continues the author, many facts will be explained respecting the habits of this acid; while at the same time the phenomenon of *two* prussiates, the one colourless and soluble, the other blue and resoluble, can be easily understood.

SECTION FIFTH.

Physiological Experiments made with the pure Hydro-cyanic Acid.

It is only by means of physiological experiments, that we can ever hope to increase the number of those substances, which medical men may afterwards use, with safety and advantage, in the treatment of diseases.* From the moment of its discovery, it was ascertained that the Prussic Acid was deleterious to the human frame, and was consequently ranked amongst poisons. This opinion was confirmed by the experiments of Coullon, Emmert, Robert, Orfila, and more particularly by those of

* Recentiores Medici, ut medicamentorum supellex magis magisque augeretur, eorumque vis quotidie magis innotescent, *plurima* sane *experimenta*, ut in semetipsis, aliisque, ita etiam in brutis, egerunt; atque hanc viam secuti, Materiam Medicam, remediis compluribus efficientia probatis, porro locupletarunt. MANZONI de præcipuis Acidi prussici medicis facultatibus specimen. 1818.

Magendie, Brugnatelli,* Duvignau, and Parent.

Not only the Prussic Acid in its *purest* state, but the substances containing it, are capable of producing the most baneful effects when immoderately taken. From the time of Dioscorides down to Deyeux, who wrote a few years back, examples have been quoted where the *bitter almonds*, for instance, have proved fatal to animals of every description; and Bauchin has been reported to have known persons, who fell victims to their excess in eating this species of almonds. A few drops of the essential oil are sufficient to destroy several animals. Even the water distilled from the *bitter almonds* is pernicious to the human frame when incautiously or copiously taken. Messrs. Duvignau and Parent made some experiments upon themselves to ascertain this fact. They commenced by taking six drops of the water distilled three

† Read the *Giornale di Fisica*, published every two months, at the University of Pavia.

times, in an appropriate vehicle, without producing any other than a transient impression. On taking 18 drops, however, vertigo was experienced, and a disposition to sleep, accompanied with a tingling of the ears and dimness of sight. When the dose was increased to 22 drops, alarming symptoms followed, such as convulsions, and vomiting, which, although the experimenters succeeded in allaying by antispasmodics, cured them completely of any ulterior wish to *ascertain* how far this substance might be deleterious to animals. A drachm of the distilled water of bitter almonds has killed a moderate size dog.

The London and Edinburgh Colleges have rejected the distilled water from the stones of *black cherries* in consequence of its containing Prussic Acid—although not in such a quantity but that it may be taken with impunity. *Kirschen-vasser* or cherry-brandy, is not free from this acid; and Haller has remarked that it killed those who used it immoderately. The same

writer cites the instance of a young man who had eaten to excess the kernels of cherries, and was attacked with a great degree of drowsiness.

Experiments have been made on birds with the fresh juice of the leaves and flowers of the *peach-tree.* These little animals uniformly exhibited symptoms of the impression it made on their system. In one of the French newspapers for 1814, we find that the late Duke Charles de Lorraine had nearly lost his life from swallowing some drops of *eau de noyau* too strongly impregnated with the essential oil of peach-kernels.

I have reason to believe that *noyau* fabricated in this country, or which, after a long voyage from Martinique, has suffered in its qualities, is restored to its flavour by the addition of either pure Prussic Acid, or cherry laurel-water.

It is in the leaves of the last-mentioned plant that the Prussic Acid exists in greatest

abundance—rubbed between the fingers, they give out a particular stupifying smell. They have a bitter taste more intense, even, than that of bitter almonds. This peculiar flavour and smell, when in a moderate degree, being rather pleasant, has induced cooks and confectioners to employ the laurel leaves on many occasions. Milk, in some parts of the Continent, is boiled with one or two leaves of the cherry laurel in it; and Ingenhouz states, that he saw people much affected by it. I was called last year to a family who had partaken of a most delicate and flavoured preparation of fish, and who had all been, indiscriminately, affected, after dinner, with vomiting, attended by a sensation of burning at the stomach. Suspecting that some metallic oxide might have accidentally been mixed with that part of the food which had been cooked in copper vessels, I desired to see them all immediately, as well as the remains of what the family had partaken at table. Amongst other utensils, a sauce-

pan was presented to me in which the fish had been dressed. The vessel was in the best order, and contained, yet, part of the condiment, and about a dozen of large and small leaves of the cherry-laurel, which the cook had added to impart an *elegant* flavour to the dish. This explained the sudden complaint of the family. The smell fully indicated the presence of the deleterious acid, and I proceeded immediately to administer appropriate substances to counteract its effect, in which I happily succeeded.

Persons need be on their guard against high-flavoured creams, blanc-mange and other dainties prepared by the confectioners.

In the Philosophical Transactions there are two cases of poisoning (unintentionally) by drinking cherry-laurel water.

Two servants at Turin, intending to regale themselves, pilfered a bottle from their mistress's cupboard, which they supposed to contain some *liqueur*. They drank several swallows of it quickly—were seized with convulsions,

and died on the spot. It is needless to say that the *liqueur* was cherry-laurel water. A similar accident was near happening to a young lady, two years ago; but the quantity taken being small, and assistance having been called in promptly, the alarming symptoms were quickly removed.*

I have already stated, that the deleterious activity of these vegetable substances, as proved by Schrader and others, is due to the presence of Prussic Acid.

It has been shown by several physiologists, that this acid, when administered to warm-blooded animals, in its concentrated state, or in the form of vapour, destroys their sensibility, and the contractility of the voluntary muscles; but such a statement should not deter the physician from inquiring whether a substance, possessed of such active properties, might not be safely introduced into the prac-

* Consult on this subject the writings of Fontana, Madden, Foderé, Langrish, Heberden, Watson, &c.

tice of medicine; for it must not be forgotten, that many of our most energetic remedies, are drawn from the class of vegetable and mineral poisons. Thus opium, henbane, hemlock, digitalis, arsenic, corrosive sublimate, &c. are daily used by the practitioner, with great advantage, though they are known to be poisonous in other respects. In fact, almost every article in the Pharmacopœia may be considered as baneful, rather than beneficial to the human frame, if the precautions, respecting their dose and intensity, be overlooked or neglected. The same reasoning holds good with regard to the acid, which forms the subject of the present paper. It is not because Dr. Magendie or Orfila tell us that dogs have been destroyed by the application or ingestion of the *prussic acid* in its most concentrated state, that we are to abandon all ideas of using it as a medicine. Who would refuse to prescribe the arsenical solution of Fowler in agues of long standing, and in some

obstinate cutaneous disorders, because arsenic, even in small doses, has been employed to destroy vermin? Coullon, indeed, proved sometime since, that the Prussic Acid, like digitalis, hemlock, &c. may be poisonous, and yet perfectly admissible into the Materia Medica; for he brought himself to take eighty drops daily, without experiencing any bad effects*.

In the year 1815, a report went abroad that a *Mr. Scharinger* of Vienna, had fallen victim to the poisonous action of Prussic Acid, accidentally applied to his naked arm, while engaged in some experiments concerning its preparation. The fact was repeated in the Medical Repository for that year; when owing to my being then engaged on the subject of

* See Coullon's Inaugural Dissertation on the Prussic Acid, defended, the 20th August, 1808. To those who feel anxious of knowing more than I have here thought proper to detail with respect to the physiological action of the Prussic Acid, M. Coullon's paper will be a source of great information, as it contains a vast number of very interesting facts. The same gentleman has since made some experiments with the Cyanogene upon animals, and has published a new work on this subject.

the acid in question, I ventured to address the editor of that respectable journal with an expression of my doubts as to the truth of the fact itself; and supported my doubts by what I deemed unanswerable evidence. The result of this address was an application from the editor to a correspondent in Germany, who in consequence of a communication from Baron Jacquin, the well-known professor of Botany at Vienna, was enabled to contradict the report, as far as it related to the Prussic Acid having destroyed *Mr. Scharinger*, for it appeared that this chemist had died of apoplexy. Yet notwithstanding this contradiction from authority, the fact has again been repeated in some recent publications, with great disregard to truth, and apparently for the purpose of throwing a good share of odium on the physicians who endeavour to establish the claims of the Prussic Acid to the confidence of every practitioner as a medicine.

This reminds me of a singular conversation which passed between a person of rank

and a popular physician some time last year, and shortly after the appearance of the former edition of this work. On his Lordship requiring to know whether he might not take the Prussic Acid for a very obstinate cough which his medical attendant had not succeeded in removing; the physician dryly observed, "Yes, my Lord, you may if you are disposed to listen to all the trash that issues from the medical press; but mark the consequence—a gentleman who had accidentally wetted his finger with the Prussic acid, and unwarily rubbed his nose with it, was soon attacked with a sort of cancer, and lost that necessary appendage to his face—while a young lady, who had also taken the same medicine for a few days, became thoroughly *blue!*" Another practitioner, by no means so popular as the one I have just alluded to, observed, more recently, in answer to whether the acid might not be of service in the case of a patient dying of pulmonic affection, that "he would rather stand bye and do nothing, than

use any *new-fangled* medicine." Such reasoning, had it been generally adopted by medical men of past and present ages, would not have contributed much towards bringing the Materia Medica into that flourishing state to which it has happily arrived at the present moment.

The experiments which have been made upon animals, with a view to ascertain the real poisonous effects of the hydro-cyanic acid of Gay Lussac, are various, and many of them curious; but a detail of them in this place would be useless, as they have been published in several works, with which every medical man ought to be acquainted; to these facts, and to the statements which I have inserted in the Journal of the Royal Institution, I must refer my readers; but with this observation, that the acid employed in these experiments, during which animals, greatly inferior to man in strength and constitution, were destroyed, is as unlike the acid now used in medicine, as the syrup of Poppies is unlike the extract of

Opium; yet both these latter substances are given as medicines; whereas, with regard to the Prussic Acid, the weakest preparation only has been adopted.

It will not, however, be superfluous in this place to repeat, that in preparing the hydro-cyanic acid of Gay Lussac, the utmost caution is necessary; as it is impossible to breathe its vapours without feeling the most dangerous effects. Dr. Magendie states, that owing to some neglect on his part, while preparing the acid for the purpose of experiments upon animals, he suffered the most excruciating pains in the chest, accompanied by feelings of oppression, which lasted some hours.

But even the strongest hydro-cyanic acid of Gay Lussac, though dangerous in its preparation, soon ceases to be so, as it is impossible to preserve it in a state of purity more than a few hours, a fact to which we have already alluded.*

* Gay Lussac says, "En conservant cet acide dans des vases bien fermés, même sans qu'il ait le contact de l'air, il se décompose quelquefois en moins d'une heure." Op. citat.

The concentrated Prussic Acid is spontaneously decomposed at the ordinary temperature of the atmosphere, and then it loses all its obnoxious qualities. In this process, carbone is precipitated, the liquid becomes brown, and if evaporation be suffered to go on, the whole disappears under the form of volatile ammonia and hydro-cyanate of ammonia, leaving behind a considerable quantity of black carbonaceous matter.

SECTION SIXTH.

Analogy which led to the use of the Medicinal Hydro-cyanic (or Prussic) Acid as a Medicine.

It can now be no longer a matter of doubt, that the Prussic Acid, however poisonous in itself, may, when properly diluted with water, be used as a medicine with safety and advantage.

This assertion, which a few years ago had little more than mere analogy for its support, has since been proved, by extensive practice, to be true to its fullest extent.

In studying the phenomena of poisoning by the Prussic Acid, it was observed that animals on which it had been made to act, and in which no trace of sensibility or muscular contractility could be found after its application, would often continue to breathe for several hours freely, while the circulation of the blood re-

mained apparently unaltered. It might indeed be said, that these animals were dead with regard to their external functions, yet still enjoyed life through their nutritive faculties.

This property of extinguishing the general sensibility, without any ostensible injury to respiration and circulation, the two principal functions of life, naturally led to a belief that the hydro-cyanic or Prussic Acid, might be advantageously used in cases of excessive sensibility and irritation; particularly when these two morbid states are likely to affect, as they often do, either the respiratory organs, or the circulation generally.

Thus, in all cases of spasmodic coughs, asthmas, hooping cough, and the various distressing symptoms attendant on a nervous habit, &c. the acid has been administered with good effect; for in all such cases, there is a vicious augmentation of sensibility, more generally known under the name of irritability. But as the Prussic Acid is said to exert consi-

derable influence over the arterial system, and little or none over the venous circulation, it might likewise be inferred, that in cases of inflammation, the acid might be employed with the most beneficial results. This kind of analogical reasoning induced professor Brera, ten years ago, to administer the Hydrocyanic acid of Scheele in cases of high pulmonary and other inflammations, in doses of four drops, twice a day; when the violence of the disease was quickly subdued, without having any recourse to more than preliminary bleeding. This, in a subject already exhausted by the depletion employed to combat the disease, must be considered as an incalculable advantage; for in all such cases there is a point where the phlebotomist is obliged to stop, or the patient might expire under the lancet, before the desired effects of copious bleeding, in checking an acute, or even a chronic habit of inflammation, are perceived.

The frequent opportunities which physicians have now had to administer the Prussic acid in

the treatment of various disorders, evidently shew that it may be used without danger; for no one case has yet been recorded, in which the acid in question (properly administered) has proved either fatal or injurious; whilst of the digitalis alone, (to say nothing of other active and poisonous medicines) several instances are to be found in the medical works, and periodical journals, of its highly baneful effects on the animal system. Yet the digitalis is still prescribed by physicians even to the most delicate subjects!—A very few grains of tartar emetic dissolved in water, and a still smaller quantity of corrosive sublimate, will each destroy life; but are we not in the daily habit of administering both, the former as a most useful evacuant, and the latter as a valuable specific? The charges, therefore, which have been brought forward against the Prussic Acid, in consequence of its belonging to the class of poisonous substances, must necessarily

fall to the ground, when even a single instance of mischief occasioned by it cannot be quoted.

That the Prussic Acid has failed in producing any sensible effect in some of the complaints in which it has been exhibited, I am not prepared to deny; nay, I am free to acknowledge that in some instances where I expected success, I have been disappointed. But is not this the case with regard to every other article in the Materia Medica, however deservedly esteemed and justly celebrated? The want of successful results in the employment of remedies for certain specific diseases, depends so much upon previous treatment, constitution, and mode of administration of the medicine itself, as well as on a proper knowledge of the animal economy, with reference to the mode of action of the remedy to be applied; that no reasonable physician will be inclined to think less favorably of a particular medicine, because it has failed to cure every disorder.

SECTION SEVENTH.

Effects of the Hydro-cyanic (Prussic) Acid on the Human System, and enumeration of the Diseases in which it has proved beneficial.

Every practitioner, who has had any experience in the use of the medicine under consideration, agrees in thinking, that the Prussic Acid acts directly on the nerves, and through them, on the circulation.* But whether the first effect produced on the nervous system be one of excitement, closely followed by corresponding depression—or whether the latter *only* occur, are questions as yet undetermined. Messrs. Duvignau and Parent† say, "We feel convinced that the Prussic Acid acts immediately on the nervous system, of which it excites the action in a manner very prompt but transient." Borda and Rasori‡ "supposed that the Prussic

* Fontana, Mangili, Brera, Borda, Magendie, Orfila, Rasori, Thomson, &c.

† American Recorder, Vol. II. p. 464.

‡ Brugnatelli Elementi di Chimica Farmaceutica. Annali di Scienze, Vol. II. 1811.

Acid possessed a quality directly the opposite of stimulus, and produced direct debility."—Coullon is of the same opinion*. Magendie considers it as annihilating, when given in large doses, the muscular and nervous power, without extinguishing the nutritive functions of life. Mangili assures us, that like the poison of the viper, the Prussic Acid produces depressing effects;† while Brera,‡ and with him, Manzoni and Fanzago§ pretend, that it is, at one and the same time, a stimulant, and a debilitating agent; the first acting locally only, the second generally. That there should exist some discrepancy of opinion in this respect, cannot be a matter of surprize; since it is only through its effect on the general system, that the practitioner, or even the physiologist, can ever be able to judge of the particular mode of opera-

* Op. citat.

† Op. citat.

‡ Op. citat.

§ Prospetti Clinici, Vol. I.

tion of this medicine. And who is prepared to affirm, that because depressive symptoms have manifested themselves, occasionally, after the administration of the Prussic Acid; such symptoms, have been developed through one, rather than another, part of the system? That it has a lowering effect in some diseases of excitement, experience daily proves—that it diminishes general irritability, no one skilled in its administration can deny—and that it does so through the medium of the nerves, seems equally evident; since it is only after a considerable nervous depression that such a species of irritability is tranquillized. With regard to its producing, at first, a transient excitement on the nerves, followed by an immediate contrary effect; I am not disposed to deny, that experiments have been brought forward to prove such an assertion: yet in those which I instituted for the purpose of ascertaining the best mode of detecting Prussic Acid, when administered by the poisonous hand of the murderer, I never observed

that the animals were either convulsed, or in pain; nor did I discover the faintest trace of organic inflammation. But after all, this is but a secondary consideration in the history of the medicine in question; and, in my humble opinion, it is quite sufficient for the purposes of practice, to note and record the aggregate sum of all the visible effects, which the Prussic Acid has been known to produce in certain complaints; in order to judge of the propriety of its application in other and similar cases. With this view, I shall beg leave to state the result of my experience on this point.

The Prussic Acid is eminently sedative, more so even than opium; but its specific mode of action is somewhat different, both as to its progress and effect, from that of the latter substance. The Prussic Acid, when administered to a patient labouring under a disease of vascular or other excitement, appears to exert an immediate influence upon the nervous system; it gradually diminishes all irritability, checks a

too rapid circulation, and calms many of the symptoms of fever. If a dry cough be present, it promotes expectoration, in the first instance, and subsequently stops the cough itself. The spirits, before exalted, soon feel the quieting impression of the acid; they become subdued; the speech, the countenance, even the expression of the eyes, assume a character of unusual meekness; there is a relief from pain and actual suffering; the patient feels it, and is grateful: sleep comes on undisturbed, respiration is soft, and the pulse more tranquil than at any other period of the complaint, having lost the throbing beat of irritation. In some few cases, these sedative effects are so much more considerable, that the patient expresses himself as if only "*half alive.*" On those occasions, there is an *apparent* entire prostration of strength, great lowness of spirits, and unwillingness to move, speak, or take food; life seems suspended, yet the head and mind remain clear and intelligent; there is a total absence of pain; neither does

the patient complain of any symptom of local or general irritation; the heat of the skin is natural, and the pulse, in the midst of this dead suspense, continues its course steadily and quietly. This state of things lasts from twelve to twenty-four hours, when it ceases; and every organ is gradually restored to its former integrity of function. It should however be borne in mind, that such instances of great depression, produced by the acid, are extremely rare; and indeed seldom occur, except where the dose has been too large, or the acid has been injudiciously administered; or from some peculiarity in the constitution. There is scarcely a remedy which does not act in a similar manner, under similar circumstances; or which does not present, more or less, some anomalies in its effects, dependant on the particular idiosyncrasy of the patient. In some few cases, the Prussic Acid disagrees with the stomach, and then it neither *can*, nor *ought* to be persisted in. It has also been said

to occasion giddiness in some individuals, in in which case, it is necessary, either to discontinue it, or to diminish the dose, and associate it with slight stimulants; but in the course of a pretty extensive practice, I cannot aver having ever observed this symptom. Opium, Henbane, and particularly the Fox-glove, &c. have often exhibited greater occasional deviations from their usual mode of action.

But the Prussic Acid has never yet been found to produce the head-ach, and heaviness occasioned by Laudanum; the fluttering and palpitations brought on by Hemlock; the parched mouth, and irritability of the throat proceeding from the action of Digitalis; nor any of the other unpleasant symptoms which these medicines are known, under certain circumstances, to develop. In a case of great anxiety to me, where the digitalis, after repeated bleedings, had been ordered in consultation by a most eminent physician, this medicine, without diminishing the action of the pulse, brought on such

alarming depression of the vital powers, with frequent vomiting, that its use was discontinued after the first thirty hours. Yet the threatening disease remained unchecked, the appearances of progressive inflammation, the fever, restlessness, and inordinate action of the pulse continued; when the Prussic Acid was had recourse to, and the patient was from that moment insensibly snatched from destruction.

I have stated in a former edition that the Prussic Acid acts gently on the bowels, in the first instance, and that when, after some days, these seem to fall into a torpid state, the mildest medicines, and those in smaller quantities than usual, suffice to produce the desired effect, when combined with the acid. The first part of this observation, however, holds good in a few cases only. In general the acid does not excite any sensible action on the bowels.

COUGHS.

The effect which the Prussic Acid produces

in almost every kind of cough, particularly if this be of a spasmodic nature, is highly satisfactory, and is more quickly obtained, than from any other medicine, I am aware of.

HECTIC FEVER.

In hectic fevers it affords ease, lowers the pulse, diminishes the number of paroxysms, works a favorable change in the action of the lungs, and their circulation; while the morbid heat of the skin, and the circular flushes of the cheeks, gradually disappear. The night sweats are also soon suspended. My former practice in this respect has been further confirmed by the observations I have had occasion to make within the last twelve months; during which period I have administered this medicine in a great variety of cases, so as to enable me to repeat the same assertions, notwithstanding the expression of doubt of their warrantableness on the part of the reviewers of this work.

PULMONARY CONSUMPTION.

The disease, however, for which the medicine under consideration has been strongly recommended, and justly so, is pulmonary consumption. It will be seen, by a reference to our cases and to those of other practitioners, that in incipient complaints of this kind, the effects produced by the medicine, have been such as to warrant us almost in asserting that it either suspended or cured the disorder.

In cases of confirmed consumption, the Prussic Acid, even at the approach of death, has proved a most advantageous palliative; greatly superior, indeed, to any hitherto adopted. In a case of the latter kind, (that of the son of a wealthy tradesman,) in which it was administered, during some days previous to his dissolution, the grateful acknowledgements of the unhappy sufferer proved, how much more supportable the last days of his

existence had been rendered, by the action of this powerful sedative.

Dr. Magendie, in speaking of those symptoms which overpower the miserable consumptive patient, states, that he had always found that the Prussic Acid, given in small, but repeated doses, diminished the frequency of the cough, moderated and rendered more easy the expectoration, and, lastly, procured the patient some sleep at night, without any colliquative sweats. "Those who are accustomed to follow the progress of consumption, and witness the sufferings, without number, by which individuals attacked by this terrible malady are overpowered, will easily appreciate the real benefit of this success"*.

ASTHMA.

Asthmatic complaints have been greatly relieved by the use of this acid; particularly the suffocating catarrh, (catarrhus suffocativus.)

* See the 8th Number of the Journal of Science and the Arts, p. 353.

In this disease, breathing appears almost suppressed or overcome, and the sound of the voice or cough is hoarse, accompanied with a hissing noise, and attended by much panting: the pulse is small, irregular, rapid, and often not easily distinguishable; there is an oppression at the chest, and sometimes pain under the sternum shooting through to the back. All these symptoms have yielded to the action of the Prussic Acid, while the paroxysms of the disease have been shortened, and rendered fewer in number.

SYMPATHETIC COUGH.

There is a sort of dry, convulsive, spasmodic cough, which may be called *sympathetic*, because dependant entirely on a morbid state, not of the lungs themselves, but of distant parts, such as the liver, stomach, spleen, pancreas, mesentery, womb, intestines, &c. The pulse is frequent, and so small, as to be with difficulty discovered. The patient experiences pain and

dragging in some parts of the abdomen, with a sense of constriction about the region of the diaphragm, as if closely encircled by a girdle; the cough is worse at night, and the expectoration more copious on waking in the morning; the face is pale, the skin dry, the pulse small and quick. In this species of cough I have successfully employed the Prussic Acid, in doses of from eight to ten drops, in several ounces of liquid, taken by spoonfuls every three or four hours. The cough in two or three days diminishes considerably; so does the expectoration, which from being thick becomes limpid, light, and purely mucous. The patient sleeps some hours without having recourse to any other narcotic; and finally experiences a degree of relief, which is always proportionate to the state of the part affected. Of course, while the sympathetic disorder is thus allayed by the acid—the cause which has produced it, namely the morbid state of one or more of the abdominal viscera, must undergo an appropriate treatment.

HOOPING COUGH.

The next complaint of respiration, in which the Prussic Acid has been given with great advantage, is the hooping-cough. It may be stated, without presumption, that in almost every case of hooping-cough, which has not been suffered to proceed longer than two or three days, without the use of the Prussic Acid—this medicine, cautiously administered, has seldom failed to remove the disease: and it is singular, that children bear the action of this sedative medicine, in small doses, better than adults.

CHRONIC INFLAMMATION;—ABSCESSES OF THE LUNGS.

That species of inflammation of the lungs, which is produced by violence or hurts, leaves sometimes behind a disposition in those organs to become again inflamed, at different periods, and on the recurrence of the slightest cause. The patient cannot lie on his side; the body is

supported by pillows; he complains of a distressing degree of heat in the back and loins; and of pain in the muscles of the legs, arms and shoulders. The voice is either stridulous or hoarse, and he expresses a feeling of considerable oppression at the chest; still he can fill this cavity without much pain or effort. A cough supervenes, which is sometimes dry and distressing; and at other times, a thin mucous expectoration follows. If this state of things last long, a decided continued fever, with two daily exacerbations, occurs and preys upon the patient, who becomes emaciated, throwing off at length a purulent expectoration, more or less abundant, which proceeds either from a diseased secreting surface, or a small abscess in the lungs. If the patient gets through this attack, there is a chance of his having it again at some future period. The former abscess heals, and another is formed, producing exactly the same phenomena. The pulse, during the attack, is quick, full, hard, and jarring. Blood

must be drawn, and often; when it will be found to be firmly coagulated, and covered with the inflammatory crust, and not unusually cupped. If the patient be quite exhausted from the effects of the disease, and the system of depletion adopted to relieve it, as well as from any other adventitious circumstance, bleeding cannot be repeated often enough to do good; nay, there will even come a time when it may do harm, although the pulse may still seem to indicate the want of it. At such a juncture, the Prussic Acid will be found productive of the most decided benefit; the pulse will be lowered, and totally changed as to character; the incessant cough relieved, and ultimately stopped altogether. The process of secretion in the pulmonary abscess is suspended; a thinnish expectoration, consisting of pure mucus, relieves the distressing and alarming symptoms of a previous dry cough; until the cough itself and the expectoration entirely cease. Sleep, which had before vanished, now re-

turns, and the respiration during sleep, is calm, soft and regular. The morning and evening paroxysms of fever do not last so long, and occur at uncertain intervals and hours, until they at length disappear altogether; and if the acid be persevered in, the morbid habit of the lungs is effectually corrected. It is during the most alarming part of such pulmonary complaints, that the sedative powers of the Prussic Acid are most conspicuous, and astonish the persons who have witnessed the disease, and the application of the remedy.

PNEUMONIA. PLEURISY.

Similar observations apply to what may be called spontaneous inflammation, either of the substance of the lungs, or of the membrane investing them, or of that lining the ribs. When the existence of either or of both is fully ascertained, and the symptoms are pressing, bleeding, of course, should be had recourse to, and repeated as often as necessary. This is the he-

roic remedy in such cases. But the loss of blood is not always sufficient to subdue the disease; and the repetition of the remedy often destroys the patient, or plants the seeds of future mischief. There is, besides, a great aptitude to renewed attacks in pectoral inflammation, arising out of a particular modification of the parts brought on by the disease or the remedies, which cannot be checked by the ordinary means employed. Here then the Acid will be found beneficial, for if given in full and appropriate doses, it will check the inflammatory diathesis, quiet the harsh and heaving cough which generally accompanies it, and ultimately shorten the period of the complaint. The first application of the Prussic Acid to such cases is due to the Professors of the Universities of Padua and Pavia.

Signor Manzoni, in his essay on the Prussic Acid, details several cases of complaints of the lungs in which that medicine was administered with decided beneficial results.

ABORTION, PROFUSE OR PAINFUL MENSTRUATION; SPITTING OF BLOOD.

Sedatives being generally given in acute pain, I was insensibly led to think that the Prussic Acid might be employed with some advantage, in removing those distressing and acute pains, which either attend or follow abortion. I have therefore tried it in a case of this kind, where every other sedative had been tried in vain; nay, with evident bad effect. My success was beyond my expectation—the pain vanished in about six hours after the first exhibition of the Prussic Acid; and, what is more curious, the flooding, which had proved untractable, stopt at the same time. This latter circumstance induced me to try the acid next, in cases of spitting of blood, and uterine hemorrhage, especially where I had reason to suspect that the influence kept up by the nerves on the vascular system, had not only been the cause of the discharge, but seemed to

maintain it. By what success these experiments were followed, the reader will be able to judge from some of the cases inserted in the second part of this treatise. Mr. Thomson, of Sloane Street, a gentleman of long and successful practice, and well known in the medical and literary world, has also tried the Prussic Acid in a case of spitting of blood, of long standing: on the fifth day the spitting of blood disappeared, and never again occurred. I attended a similar case afterwards with him and with the same success.

NERVOUS DISEASES.

Narcotics, and other sedative medecines, are generally productive of benefit in diseases distinguished by the too generic, and now *degenerated* name of *nervous*. It follows, that if the Prussic Acid be, in reality, possessed of sedative properties, its use in those diseases, must be obviously recommendable. Experience has, in fact, proved, that in this class of

complaints the Prussic Acid can be administered with great success. Many authors, of whose veracity the most fastidious could scarcely doubt, have agreed in attributing to those substances which contain the Prussic Acid, the property of correcting nervous irritability, and of curing other nervous disorders; nor does it detract from the validity of their statements, that in employing those substances, they were ignorant of their containing the acid in question. Are the assertions of the older practitioners, respecting the sedative properties of opium, or the emetic qualities of ipecacuana, to be doubted, because it appears that they were not aware of the former containing *morphium*, and the latter *emetine*?

Hufeland, Langrish, and Wurzen have recommended the laurel water in hypocondriasis, and nervous irritation. Messrs. Duvignau and Parent knew a lady subject to hysteric affections, who always derived much relief from small doses of cherry brandy, in which peach-

kernels, cut fine, had been digested. Methinks I see a malicious smile on the face of some of my readers at this observation, as if it meant that the lady owed her improvement to the *brandy* rather than to the kernels; but the authors tell us no such thing; for brandy alone gave *no* relief. In a case of *spasmodic ileus*, after strangulated hernia, the laurel water proved beneficial according to Hufeland; and Winkler gave the same medicine, continued three or four weeks, to young female patients labouring under very painful symptoms arising out of particular circumstances, when every difficulty was removed. Bremer, of Berlin, employed the concentrated water distilled from the bark of the *prunus padus*, with much success in spasmodic affections of the bowels. In severe head-aches, allied to spasm, as well as in nervous pain from local injuries, I have used the medicinal Prussic Acid with uniform good effects. In a case of spasmodic affection of the trachea, accompanied by a peculiarly irrita-

ble state of the nervous system, the Prussic Acid was administered with complete success by my friend Mr. Thomson. This case will be found in the second part of this treatise.

From analogy, I was led to suppose that the acid in question might prove beneficial not only in cases of spasms of the stomach and diaphragm; but likewise in cases of locked jaw, tic-doloureux, and, perhaps, hydrophobia. My experience of its utility in these affections has been limited. In two instances of spasmodic attacks of the stomach, where the patient was affected by Phthisis, great relief was derived from the acid.—A case of what might have ended in hydrophobia, will be found in another part of this work, in which I employed the acid with success.—But I cannot make as favourable a report of this medicine in tic-doloureux and tetanus. In a very lamentable instance of the former of these diseases, the subject of which is too well known to the faculty in the metropolis, the acid taken for four days, under my direc-

tion, seemed to exert but a partial influence on the system, and neither checked the pain, nor diminished the number of attacks. At the same time it ought to be stated, that during the use of the acid, the patient was under the periodical influence of one, and the permanent effect of another source of irritation, namely, galvanism and a seton in the neck.—The instance of tetanus alluded to, is that of a young lady in whom the disease had been brought on by the accidental puncture of a nerve, which produced contraction in the limbs, and other symptoms attending similar injuries. The acid was administered without any visible effect for three days.

It is a curious fact, which ought to be recorded, that in all the nervous complaints, described in this section, the Prussic Acid has produced the beneficial effects here mentioned, after other narcotic medicines had either lost their effects from continued use, or had been tried in vain in the first instance.

ORGANIC AFFECTIONS.

When I published the first edition of this essay, my experience had not led me to form any decided opinion, with regard to the effect which the Prussic Acid might produce in organic affections. Although diseases of this nature are essentially beyond the reach of medicine, it is yet in the power of the physician, often to alleviate the severe sufferings which they occasion. Even where a cure cannot be effected, it is our duty to endeavour to render more supportable, the irrevocable fate of the patient. I know of no class of disease which calls forth, in a more forcible manner, the sympathetic feelings of the attending practitioner, than that which time and anatomical knowledge have stamped with the unvarying character of organic. In such cases to soothe is a victory; and possessing full proofs of the properties of the Prussic acid in this respect, I ventured to administer it, where neither symptoms of inflamma-

tion, nor spasmodic action seemed to indicate the propriety of its exhibition; but where the mere blunting of morbid sensibility was a most desirable object. Of the various cases of organic complaints which I thus treated, I shall only relate two in their proper places, the one a carcinomatous affection of the stomach—the other a cancer of the womb, with dropsy of the right ovarium. It would be needless to multiply the examples. It has come to my knowledge that a physician of some note, who visits the capital during the winter, employed the Prussic Acid, some time last year, in a case of a most distressing and painful disorder, under which, the unhappy patient, a lady, was fast sinking; and that by means of this medicine he succeeded in affording her that relief from incessant pain, which neither opium, henbane, nor the *black drop*, although taken in large doses, had before produced: and thus, painless, and almost without suffering, the resigned patient sunk under the weight of her complaint.

LOCAL DISEASES.

I was not aware, until I had made trial of the Prussic Acid in some local diseases attended by inflammation, that a similar application had been recommended by other practitioners. Even now I am not conscious that the *medicinal* Prussic Acid has been employed before, for the particular purpose here alluded to. We read of Baillie using with success a cataplasm, made with millet-meal and a saturated infusion of the leaves of cherry-laurel; and of Tomasini, Cheston, and others ordering lotions of the same medicine in cancerous affections of the face with great advantage; but in no book have I yet found that the Prussic Acid itself has been employed on such occasions. This experiment, as I before observed, I have had an opportunity to institute, and with no small share of success, as I shall endeavour to show hereafter. I have used it in the form of injection, lotions, and fomentations; but the relief

it produces is not of a permanent nature except in particular disorders admitting of its frequent application. On mentioning my ideas on this subject, to a late eminent and ever to be lamented friend and physician, he informed me that he saw instantaneous good effects produced by the application of a cataplasm made with prussian blue, in a case of high inflammation of the face, brought on by numerous stings from wasps.

I shall conclude this section with observing, that in the course of the practice of Professor Brera, Borda, Rasori, Bremer, Hufeland, Coullon, Magendie, Duvignau, Recamier, Lerminier, Thompson, Scudamore, and my own, as well as in that of many others, whom it would be tedious to mention, no *bad effect* has ever been observed to result from the action of the Prussic Acid given as will be mentioned hereafter. It must be acknowledged, at the same time, that great care is requisite on the part of the physician who prescribes it—that it requires to be watched—and that, in fact, such

degree of attention and vigilance is necessary in its administration, as can only be duly appreciated by a practitioner, whom experience has rendered fully aware of every effect, which this powerful remedy may produce on his patient.

SECTION EIGHTH.

On the Poisonous effects which the Prussic Acid, like every other Narcotic, produces on the Animal System, when taken in large quantities.—How to oppose them—and mode of detecting the presence of the Acid in Liquids suspected to contain it.

No direct experiments can, of course, be instituted, to ascertain the effects which a medicine so powerful as the Prussic Acid, is likely to produce on the human system, when taken in larger doses than those employed for medical purposes. All that can be known, in this respect, must naturally arise either out of some untoward accident, or criminal intention; or be deduced, by inference alone, from the action exerted by the acid upon inferior animals.

Cases have occurred where, from imprudent exposure to the vapours of the Prussic Acid, or from the ingestion of a larger quantity of it than was prudent; as well as from an excessive

use of some of the substances containing it, persons have suffered considerably; and have exhibited all the appearances of being poisoned. Some writers pretend that Scheele himself, who died suddenly, while engaged in some inquiries into the nature and formation of this acid, was affected by its deleterious qualities.—Dr. Ittner, accidentally felt the effects of the Prussic Acid gas, which had been inadvertently diffused through his laboratory. Upon respiring a large quantity of this air, great oppression at the chest, and painful respiration ensued. Shiverings came on with a burning heat, giddiness, vertigo, and lassitude. The fever lasted two hours; the other symptoms gradually disappeared in the course of a week.—Messrs. Duvignau and Parent experienced the same effects on taking twenty drops of the distilled water of bitter almonds, which, our readers will recollect, contains a large quantity of the acid in question.—Coullon says, that on taking an increased quantity of diluted Prussic Acid, which in the

dose of twenty or thirty drops had not produced any very material effect, he found the liquid to possess an unsupportable bitter taste—an increase of saliva took place, and nausea in a slight degree, occurred two or three times. The pulse became more frequent, but returned to its former standard in less than two hours. He experienced, for a few minutes, a sense of weight in the head, and a slight head-ach, which seemed to affect the parts immediately under the skin of the forehead. During upwards of six hours he felt an oppression at the chest, succeeded, alternately, by a slight pulsating pain, which pressure did not, however, increase—From the *Annales de Chimie*, for October 1814, we learn that a professor of chemistry, having inadvertently left on his table a phial filled with a solution of Prussic Acid in alcohol, a female servant, who had been seduced by its agreeable smell, drank a small glass-full of it, and fell dead at the end of a few minutes, as if struck by apoplexy.—A person of the name of

Donellan was tried in 1718, for administering a medicine containing laurel-water, to a relation whose fortune he expected to inherit. The unhappy victim died in the course of an hour.—Madden has detailed in the philosophical transaction of 1731, two cases of death, from unsuspiciously drinking laurel-water.—The case of two other women who drank a notable quantity of the same water; and that of a young man under similar circumstances, are related by Orfila, in his work on poisons. They all three died in a short time without any struggle, pain, or convulsion.—A physician and his friend drank tea with milk, into which a few leaves of the cherry-laurel had been previously infused. The friend, still weak from a previous fever, fainted and fell to the ground. The physician experienced vertigo and oppression.*

The following case is quoted from Hufeland. D. L. a robust and healthy man, aged 36 years, while about to be seized as a thief by the

* Vatter, Diss. de Laurocerasa, etc.

police officers, snatched a small sealed phial from his pocket, broke off the neck of it, and swallowed the greatest part of its contents.—A strong smell of bitter almonds soon spread around, which almost stupified all present. The culprit staggered a few steps, then, without a groan, fell on his knees, and sunk lifeless down to the ground. Medical assistance being called in, not the slighest trace of pulse or breathing could be found. A few minutes afterwards, a single and violent expiration occurred, which was again repeated in about two minutes. The extremities were perfectly cold—the breast and abdomen still warm—the eyes half open and shining, clear, lively, full, almost projecting, and as brilliant as those of the most ardent youth under violent emotion. The face was neither distorted nor convulsed, but bore the image of quiet sleep. The corpse exhaled a strong smell of bitter almonds, and the remaining liquid, being analysed, was found to be a concentrated solution of Prussic Acid in alcohol.

Almost every active medicine in the Pharmacopœia, will, if taken in large doses, act as a poison; and when placed in the hands of the guilty, or the ignorant, has proved a source still more fruitful, than the remedy under consideration, of fatal accidents, and premeditated crimes.

It would be needless to repeat, in this place, all the experiments that have been made on animals with the Prussic Acid. It is enough that the inquiring physician, and the physiologist, doing violence to their own feelings for the sake of the public good, should meditate on the details of such experiments, in order to deduce from them whatever may offer a chance of relief to suffering humanity. To the general reader, and even to the practitioner, a relation of such details would prove equally useless and distressing.

But, although the details of the experiments themselves ought not to be repeated in this place, I still think that the result of any investigation to

which those experiments may have led, should be made public. The observations of other writers on this subject may be consulted by referring to their works. Here I shall only give the result of my own inquiries and remarks.

On examining an animal destroyed by the Prussic Acid, or even by the laurel-water, the essential oil of bitter almonds, or the distilled water from the *prunus padus*, (for they all act nearly in the same manner) the most striking phenomena, I have remarked, are these. If the dose be large, and the animal in the full enjoyment of health and strength at the time of taking the acid, a sudden cessation of vitality takes place, quicker than thought can imagine, or words describe. It is as sudden as the cessation of motion in a watch when the finger is applied to the balance—yet none of the machinery is put out of order! No convulsions follow. In some instances the animal whirls round once, and falls on his side, its body bending inwardly

with a gradual curve. The eyes are fixed, opened, and as if still animated by life. All movements cease externally. The insensibility of the nerves and muscles is complete. Neither pricking, wounding, nor any other local injury can excite in them the faintest trace of life; yet on resting the hand on the chest, the heart is felt to beat and the arteries to pulsate with imperturbable tranquillity! The application of a candle, or of a glass to the nostrils and mouth, gives no indication of the pulmonary function being active. If the abdomen be now laid open, the novel spectacle of the vermicular, and annular movements of the intestinal canal will become fully evident and continue so for some time. Yet no means that can be devised will succeed in exciting muscular or nervous contractions, not even that of the strongest galvanic battery. I have looked in vain for the Prussic Acid in such cases in the stomach, the cavity of the chest, or of the head, or even in the intestines.—Its smell pervaded the whole system, and seemed embodied with

the very substance of the muscles; but no where could it be traced except in the thin, blackish, and decomposed blood, extracted from the heart, or squeezed out of the pulmonary arteries. How did it penetrate thus far?—I have read that other experimenters have found the muscles flabby—the coats of the stomach relaxed, and black—the vessels of the brain injected; and that many other singular appearances were by them equally noticed. Not so with regard to the few experiments I made, some of which I have very recently repeated. Every part seemed to be in the same condition that persons, in the habit of making *post mortem* examinations, must have observed in cases of natural death. In this latter observation I am equally borne out by the authority of Orfila.

Where, either from accident, ignorance or criminal intent, the Prussic Acid has been taken in such a quantity as to produce deleterious effects, it will be of the utmost importance to the physician to know how he may quickly sub-

due them, and save the patient's life. Several modes of treatment in these cases have been proposed, which I shall briefly enumerate; and then, with the reader's permission, will I also lay before them the result of my own practice in this respect.

But before I proceed to this part of my subject, it will not be inexpedient to give a short account of the symptoms attendant on poisoning by the Prussic Acid. They are as follows: stupor and numbness, with oppression and a sense of gravitation at the summit of the head. Yawning and an irresistible disposition to sleep; vertigo, and dizziness of sight. All or any of these preliminary symptoms, according to the quantity of the poison taken, are generally observed by the practitioner, if sent for in time. The pulse is found to be rather strong at first, but flags soon after, and becomes either frequent wiry, and small,—or slow and vibrating. A paralytic state of the extremities is remarked next, the pupil remains unalterably dilated—

the sensibility of the organs of sense is greatly diminished. Every animal function seems impaired, except respiration, which is very rarely indeed, accelerated or difficult. Vomiting and hiccup shortly precede the aggravation of every nervous symptom, when life ebbs fast, and becomes at last extinct. In no instance of poisoning by other narcotics, does death approach so meekly. It seems like the slow-descending of the last curtain, which takes from our sight the closing scene of a tragedy.

Orfila in his work on poisons tells us, that vinegar or the vegetable acids—coffee—a solution of chlorine in water—camphor—emollient drinks and bleeding, have been successively, but not *successfully* recommended. To the first of all these pretended *antidotes*, there is, however, a most serious objection. It quickens and gives more energy to the action of the poison. Coffee, as far as it may stimulate, might be employed with advantage; but its powers are not sufficient to meet the exigency

of the case. Chlorine and camphor deserve but a partial commendation—while bleeding seem decidedly a fatal measure. Coullon asserts that oil, milk, ammonia, caustic potash, a solution of soap, chloric acid, and the pyrozoonic oil, as well as Cologne water, may be of service in cases of poisoning by the Prussic Acid. He does not, however, speak confidently of their effect; nor does he seem inclined to attach much importance to the means suggested by some recent writers, who proposed to throw into the lungs particular substances, with a view of counteracting the deleterious effects of the acid; or endeavoured to quicken the patient into life by an artificial respiration. The authors of the paper on Prussic Acid inserted in the American Recorder, consider at full length the claims of every substance which has been proposed as an antidote to the Prussic Acid, and conclude with saying that we are entirely ignorant of a counteragent of this poison. In fact how can it be otherwise? If it be

true that a few minutes after death, the poison is not to be found either in the cavity of the stomach or in any other part of the system where remedies can reach it; to attempt such an experiment would be, to practise a sort of deception on the friends of the patient; losing at the same time, the only fit opportunity, perhaps, of doing real good by the application of means calculated to rouse the depressed energy of the nerves, and thus counteract the effect of, rather than to strive to render harmless the poison itself. There is every reason to believe that the Prussic Acid, taken in large quantities and in its concentrated state, is partially, if not wholly absorbed ere *it reaches the stomach*—else how happens it that scarcely a minute after its exhibition, I have, in common with others, been unable to detect its presence within that organ. If so, then all chemical attempts must be nugatory—no decomposition, or fresh combinations can be produced to render it harmless; nor will an emetic,

although so much recommended, be of more service in freeing the system of its presence.

In some recent experiments upon cats and dogs, the quantity of the acid having been so measured that it did not produce immediate death, I availed myself of the opportunity afforded me by the delay, to try the various substances which were most likely to impart to those animals additional powers, with which to combat, as it were, the depressing effects of the acid; and I think I am authorized in concluding, that all medicines taken from the class of diffusible stimuli will be found, in most cases, to answer the desired effect. Hot brandy and water, with perhaps some liquid ammonia —or the latter in combination with camphorated spirit, properly, though sparingly diluted— or oil of turpentine, are of all the means employed, by far the best and the most effective. I feel confident, that in some instances I have succeeded in restoring to healthy action an animal, which but for the means above described, would

have fallen a victim to the deleterious effects of the Prussic Acid, though given in a moderate quantity. Happily I have never had occasion to try these *counteracting* substances on the human system; but in the recent case of a lady who had imprudently repeated too often the prescribed dose of the acid, from a desire of encreasing the comforts which she had already derived from its use; the frequent potation of hot brandy and water succeeded in removing all the alarming symptoms that followed her imprudent determination.

I should therefore recommend, in cases of danger from the inadvertent or premeditated administration of too large a quantity of this medicine, the means I have last mentioned, given liberally, and immediately.

Instances may hereafter occur, when the practitioner will be called before a tribunal to answer, from his professional knowledge, whether a particular case of death can have happened from the action of the acid under consideration;

and on his decision may depend the life of the accused, or the future infamy that may attach to the memory of the deceased. It is, therefore, of the utmost importance, that he should be prepared to give positive information on this highly delicate subject. We look in vain amongst the several authors who have written on the subject of the Prussic Acid, for a method of detecting its presence when mixed with any other liquid; and it is only after many experiments, that I can with confidence propose the two following methods.

After collecting the blood contained in the ventricles of the heart, a portion of the contents of the stomach, and of the superior intestines, together with a certain quantity of any fluid which may chance to be present within the cavity of the head, chest, or abdomen—and having agitated the mixture for sometime in distilled water, and filtered the liquid, (taking

care to keep the whole at a low temperature,) proceed to the following experiments.

A. To a small quantity of the liquid add a few drops of a solution of caustic potash in alcohol.

B. To this, a few drops of a solution of sulphate of iron must be added, when a cloudy and reddish precipitate, of the colour of burnt Terra-Siena will fall down.

C. Some sulphuric acid is now introduced into the tube, when the colour of the precipitate will instantly change to that of a bluish green, which by a permanent contact with the atmospheric air, becomes gradually of a beautiful blue, assuming at the same time a pulverulent aspect.

OR,

A. Treat the filtered liquid with carbonate of potash.

B. Add a solution of sulphate of iron with a small quantity of alum: a precipitate, as in the former method, will fall down which if treated by:

C. Free sulphuric acid, will also become blue and pulverulent. During this last experiment there is a disengagement of carbonic acid gas.

The reader may satisfy himself of the correctness of these experiments, by treating, according to either of the above methods, a small quantity of water to which a single drop of Prussic Acid has been previously added, when the same results will be obtained. If, on the contrary, a similar experiment be made upon plain water, or any animal fluid not containing the Prussic Acid, the effects above described will not be observed.

Evidence may be pushed still farther, and the existence of the Prussic Acid proved in a more positive manner by decomposing the precipitate, which is a true Prussian blue, so as to separate the acid. For this purpose, heat the precipitate with an equal quantity of tartaric acid in a glass retort, at the temperature of 150°, when the hydro-cyanic vapours will soon exhale from the mixture, and may be received in water.

SECTION NINTH.

History of the Introduction of the Prussic Acid into Medical Practice; with an account of the various Publications that have appeared respecting its medical use, down to the latest period.

In order to avoid any unnecessary digressions, I shall limit my observations respecting the introduction of the substance, which forms the subject of these pages, into practice, to the free and combined Prussic Acid—that is, to the acid such as we are in the habit of prescribing now, and to that which has been administered under the form of laurel-water. There is no doubt but that former practitioners recommended the laurel-water as a medicine, without knowing that its properties were due to the presence of Prussic Acid; this discovery being, as I have elsewhere stated, due to more recent times, and to Shrader; but it is not equally certain, whether those who introduced the Prussic Acid itself into the materia medica, as a remedy against the same diseases for which

the laurel-water had been before recommended, were not led to it by a previous knowledge of that fact. Indeed, the physicians who first adopted the pure and diluted Prussic Acid, in lieu of the laurel-water, Brera, Borda and Rasori, have acknowledged, that from an analogical reasoning, respecting the power of laurel-water, and from the subsequent discovery of its containing Prussic Acid, they were induced to employ the latter in preference. But Dr. Magendie, who, besides the same source of information and induction, could scarcely have been ignorant of the publications of the above professors, previously to his ever employing the Prussic Acid in his practice, tells us, in his observations already quoted, that he was led to use it by the result of his own unassisted reflections on what he had observed during some experiments respecting the poisonous effects of the acid on animals; and makes no mention, except in his last edition, of any other physician having publicly, and for several years, as I have shewn

and will further shew, recommended and pre-prescribed that medicine in the same diseases for which he has more recently proposed it.

If we are to believe Darwin, the use of the cherry-laurel dates from immemorial time; nay, he asserts, that the Cumean Sybil never sat on the portending tripod without first drinking a few drops of its juice. Be this as it may, it is certain that the cherry-laurel was not cultivated in Europe until the year 1576, when it was brought hither from Trebisonde by David Ungnad, a German ambassador at the Port. For some years, this plant served only as an ornament in gardens, until the accidental eating of its leaves had nearly occasioned death in one or two individuals. This circumstance having directed the attention of the profession, and other scientific persons, to the properties of this plant, some of them recommended the water distilled from its leaves as a medicine. Duhamel and Brown-Langrish were among the latter; and some experiments are recorded, where a few

drops of the liquid in question, given daily to a lean and sickly dog, produced the happiest change in its appearance. But not long after this epoch, an alarm was raised against the distilled laurel-water, by the recital of cases in which it had proved a deadly poison; and Madden was the first, who in a letter to Mortimer, subsequently inserted in the Philosophical Transactions, called the attention of the public to this highly important fact. Experiments were immediately entered upon, in consequence of his observations, in various parts of Europe, which confirmed, beyond contradiction, the assertions of Madden; and it resulted from various reports, founded upon the experimental investigations of Nichols, Watson, Stenhelius, Rozier, Duhamel, Vater, and Fontana, the latter of whom wrote a work, *ex professo*, on the subject, that water, distilled from cherry-laurel, was a violent poison.

About this time, Dr. Cullen directed his attention to this subject; and as the *laurocerasus* had, from the moment of its being

discovered to possess poisonous qualities, been tried as a medicine; he endeavoured to ascertain whether, as such, it acted in any specific manner on the system. His opinion in this matter, however, can have but little weight, for it does not appear that he ever instituted a single experiment, or that he ever made use of the medicine. Still he thought that the medicinal virtues of the plant were fairly to be deduced from its general powers: and although he denies that there is any evidence to shew how greatly beneficial it had proved, as some authors pretended, in cases of phthisis and obstructions of the liver—and seems rather disposed to believe that its good effects would be obtained from external applications only; he declares, that the *lauro-cerasus,* in the hands of a future *Storck,* may prove a valuable medicine. Dr. Cullen went even so far as to state, by way of encouraging medical men to try the laurel-water, that it had never shewn a tendency to produce topical inflammation.

We have the authority of Linnæus for believing that the Dutch were among the first to use the laurel water, in consumption of the lungs;* and Dr. Paris, in speaking of the Prussic Acid, in his lectures on the philosophy of materia medica, before the Royal College of Physicians, has very properly noticed this fact, as having, most likely, given rise to the present practice of employing the free Prussic Acid in the same complaint. The use of the *lauro-cerasus*, however, seemed to have been applied chiefly to disorders totally distinct from phthisis. Langrish and Bergius gave it with success in intermittents; Hannemann in chin-cough; Plenck, as a gargle in inflammatory sore throats; Thilineus, Hufeland, Haller, Thuessen, &c. in various kinds of nervous diseases and vesaniæ. Still the active principle to which these curative properties of the lauro-cerasus were to be attributed, remained unknown; and none of the preceding authors can be considered as

* See Amænitates Academicæ, Vol. IV.

having introduced the Prussic Acid into the materia medica.

It was about the conclusion of the last, and the beginning of the present century, that Schrader, a chemist of Berlin, discovered that the Prussic Acid was a constituent part of the cherry-laurel. By treating the water distilled from the leaves of this plant with lime, and adding a sulphate of iron, he obtained Prussian blue on the further addition of either muriatic or sulphuric acid. The existence of the Prussic Acid in the cherry-laurel being thus proved, Emmert immediately began a series of comparative experiments with the acid and the laurel-water, to which I have already alluded in a former part of this treatise.* Coullon followed in 1808, and a few more after him. But these practitioners confined themselves, chiefly, to the physiological action of the acid, and made no

* Dissertatio inauguralis de venenatis acidi borussici in animalia effectibus, &c. 1805.

Coullon—Considerations medicales, &c. 1808.

use of it as a medicine in any particular disorder. This part of the history of the Prussic Acid stands thus. In the year 1797, Professor Brera was the first who used the prussiate (cyanuret) of mercury in syphilitic diseases; while Borda, induced by the experiments of Fontana on the action of the laurel-water, administered the latter in cases of inflammatory and sthenic complaints. The real nature of the laurel-water was, then, not known; but in 1800, when Schrader had made the discovery, to which I have so often alluded in the course of the present work, Borda announced to the world, that the Prussic Acid might be advantageously used in diseases of high excitement, without however employing it himself. This idea of Borda was reprinted and published by Brugnatelli in his Pharmacopæia. Rasori, who was, about this time, one of the most distinguished teachers at the university of Pavia, lost no time in adopting the prevailing views of the day, and gave the Prussic Acid in sthenic diseases

with various success. But the first employment of this substance as a medicine in maladies of the chest, is more particularly due to professor Brera, who during the year 1809-1810, administered it to a female patient affected with pneumonia, and threatened, from the violence of the disease, with suppuration and suffocation.* From that moment the Acid was uniformly used in the treatment of these complaints. In the same year, Brera employed the acid as an anthelmintic; and the success he met with, is recorded in the work mentioned in the note at the foot of this page. This latter property of the acid was further confirmed by the experiments of Bremer and others. In the course of succeeding years, the use of the acid was extended, but chiefly in the north of Italy, to other complaints, such as menorrhagia, spitting of blood, &c. In Germany, hydrophobia was said to have been cured by it; and we are told by Messrs. Duvignau and Parent, that in

* See Prospetti Clinici di Brera, No. 1.

1812, Recamier arrested the fatal progress of that disease in one of his patients, at the hospital of La Salpetrière, by means of the acid in question. In 1815, Dr. Magendie, agreeably to what he states in his first essay on this subject printed three years afterwards, treated a case of pulmonic complaint, as Brera, Borda, and others, had done long before him,* and was equally successful. Still no publication which treated professedly of the medical properties of the Prussic Acid, appeared yet in France, and much less in England. The subject, as far as it related to its chemical history, and to its physiological action on animals, had engaged the attention of several writers in the former countries, it is true, and a few of their memoirs were translated and published in England; but the attention of the profession of neither nation had yet been called, specifically, to its medicinal powers; although the Italian practice on that subject, must at the time, have been pretty

† Op. citat.

generally known on the continent; and their memoirs, antecedent to Dr. Magendie's paper, must have circulated freely in a printed form.*

In the year 1815, having, at the suggestion of Borda, and immediately after my return from Italy, whither I had been on a short visit, entered upon some experiments respecting the medical and chemical action of the Prussic Acid, I endeavoured to direct the attention of the profession in this country to the subject, in a paper which was published in the September number of the Medical Repository for that year. Until that time, no mention had been made, by any English practitioner, of the Prussic Acid as a medicine; nor had the slightest allusion to the Italian practice, of employing it as a sedative medicine, occured in any English work or periodical publication, to my knowledge.

* Professor Brera's work, "Prospetti dei risultamenti ottenuti nella Clinica Medica dell' Imperiale R. Università di Padova ne' sei anni scolastici 1809-1815," was printed in 1816.—Dr. Magendie's paper on the use of the Prussic Acid, in diseases of the chest, was first read at the Royal Institute of France, at the latter end of 1817.

I have already observed, that the incorrect statement of M. Scharinger's death from the action of the Prussic Acid externally applied, had led me to express publicly, my doubts as to the truth of the fact: and that upon inquiry the fact itself proved to have been wholly disfigured. That circumstance gave me an opportunity to address the profession at large, respecting the medicinal properties of the acid in question, earnestly soliciting their attention to that important subject. As a part of the history of the introduction of this new medicine into practice, of which I am attempting a sketch in this Section, it will not be considered superfluous to quote one or two passages from that paper. After considering the Prussic Acid in a chemical and physiological point of view, the paper proceeds thus: "But there is another view of the subject to which I am anxious to call your attention, (the Editors) and that of your numerous readers. I allude to the *beneficial* effects that have lately been derived from

the use of the acid in question. Professor Borda, Lecturer on Materia Medica, in the University of Pavia, has introduced the Prussic Acid into the practice of Physic* as a valuable remedy in violent pulmonary inflammations, in diseases of extreme excitement, and in cases of worms. *I do not find this therapeutical application of the acid noticed in any of the English medical works* to which I *have had* access; and from a supposition that it might have escaped the attention of the English physicians, *as many other foreign scientific subjects have,* in consequence of the late political commotions, I feel induced to communicate a short account of this new practice to the public."

"Professor Borda had been in the habit of prescribing the *aqua lauro-cerasus* in doses of from twenty to thirty drops in two ounces of water, every two hours, in inflammatory dis-

* I was then ignorant of Professor Brera of Padova, as I have already observed in this Treatise, having used the same medicine some years before Borda.

eases: when, by a chemical analysis of this water, it was found that Prussic Acid formed the most important of its constituents; and that when deprived of the acid, the laurel-water became wholly inert. This naturally led him to try the Prussic Acid itself, which he did in a variety of cases, giving from four to six drops of it in distilled water, with a view to diminish the excessive action of the heart and arteries, and thus arrest the progress of inflammation."

"The materia medica, has thus been enriched by the addition of a new and a powerful medicine, which, on the other hand, is considered as a most violent poison; and while we find the Prussic Acid registered amongst the most important and effective preparations of Brugnatelli's * general Pharmacopœia," &c. &c.†

* Edition of 1814, iii vol.—a most interesting work.

† GRANVILLE on the Effects of Prussic Acid, 1815. Medical Repository, vol. iv.

In the memoir, so often quoted, of Messrs. Duvignau and Parent, it is stated, that a young English physician who was attached to the Russian Imperial Guard, then quartered at Paris, "treated several of them, ill of intermittent fevers in the Hotel Dieu in 1814, with strong doses of Scheele's Prussic Acid mixed up with other substances. Most of the patients experienced much disorder, anxiety, difficulty of breathing, vomiting, and in short all the symptoms of being poisoned. All except a few, were perfectly cured in a short time." It is to be regretted that the name of this young and bold, yet successful English practitioner has not been divulged. Were I to conjecture, as to the individual, I should mention Dr. Hammick, the brother of the Surgeon at the Naval Hospital at Plymouth, who, I knew, held a high medical situation on the Staff of the Emperor of Russia, at the epoch here mentioned.

Towards the latter end of 1817, while I was yet a resident in Paris, Dr. Magendie read his

first paper on the use of Prussic Acid in pectoral diseases. This paper I received from him with a request that I would translate it for the purpose of communicating it, exclusively, to the Editor of the Journal of the Royal Institution. This task I performed late in the same year, and the memoir will be found in that periodical and useful publication.

While thus engaged in promoting the adoption of this medicine in England, I felt not a little mortified on perceiving that the subject seemed not to engage, in the smallest degree, the attention of my brethren on this side of the water. Nay, having by this time had occasion to administer, both in public and private practice, the Prussic Acid, I found that, with two exceptions, I could not prevail on those, whom I had occasion, either to meet, or to speak to on the subject, to give it a trial. Of these exceptions I have made honorable mention in my first edition. They are Dr. Scudamore and M. Thomson, and I have, in common

with the public, reason to believe, that their opinion of the efficacy of this medicine differs very little, if at all, from my own. The cases with which they have supplied me, are recorded amongst many others, as a proof of the correctness of their judgment in readily adopting a powerful agent as a means to combat obstinate diseases, against which that medicine had been recommended on highly respectable authority; and as a reproach to those, who, be the evidence what it may in favour of new medicines, are always ready to reject them with scorn, without any previous inquiry, and from motives of presumptuous supererogation. By this, I by no means wish to imply, that because a new medicine is recommended, by however respectable an authority, every practitioner is bound to obey the invitation, — nothing is farther than this from my thoughts: but in making my observations on the subject, I hold it fair to insinuate, that any hasty condemnation of every improvement in therapeu-

tics, is more likely to check the progress, which that branch of medical science is now happily making; than any readiness, which some practitioners may shew, to embrace every new suggestion in materia medica, especially when supported by fair and authentic evidence. Be this as it may, finding that the opportunities which I had enjoyed in the course of my practice, had enabled me to give the Prussic Acid a proper trial in disorders for which I had been instructed to administer it, as well as in others to which I had first extended the application of its powers; and having, also, been the first who prescribed the acid in England, I thought it necessary, as well as prudent, to give publicity to the result of my observations. This determination gave rise to the little essay entitled "Further Observations on the internal use of the Prussic Acid, &c." printed in March 1819,—in which a complete history of this substance, considered both chemically and medically, with a greater body of facts, and number of cases

than had yet been published, in this or any other country, on the subject, was, as far as then laid in my power, faithfully recorded. Of this little work reviewers have spoken freely, and with great liberality; so that, far from being hurt at any remarks they have made, which seemed to militate against my doctrines in some few points, I beg, in this place to thank them, for the friendly and prudent corrections they have suggested—while at the same time, my acknowledgements are due to them for the encouraging recommendation they have bestowed on the work.

Since the publication of the first edition of the present essay, memoirs, on the same subject, have issued from the press in almost every country in Europe, and also in America. Dr. Magendie was again foremost, amongst the writers on this occasion; but his second memoir, now before me, contains nothing of his own, save the re-impression of his former paper, with a short reference only, to

some fresh cases—a short note of half a page—and four or five formulæ. The remainder is made up of very short abstracts from a pamphlet of M. Fontanelles, and the thesis of Manzoni, and of a literal translation of two-thirds of my own work, occupying thirty-eight pages out of the sixty-nine of which Dr. Magendie's pamphlet is composed. Mons. Coullon, whose former observations on the Hydro-cyanic Acid, have been more than once noticed in these pages, again came forward in 1819, shortly after the appearance of Dr. Magendie's pamphlet, with a memoir, entitled, "Medical Researches and Considerations on the Hydro-cyanic Acid, its Base, Compounds, Antidotes, &c." Mons. Coullon obtained the prize from the Society of Liege for this memoir; and, as far as I can judge, with great justice. Mons. Coullon has proved himself a most indefatigable compiler and experimenter. Unfortunately, however, no new facts can be elicited from his work of any practical utility; and as Dr. Magendie had already made

as much use of what Brera had done, and of what my little essay contained, as was consistent with his views, M. Coullon thought it unnecessary to say another word about either; and consequently, not the slightest allusion is made, either to the Italian professor's, or to my own production on the subject; and this too, in a work which professes to give a complete history of that medicine! M. Coullon has divided his work into three chapters; the first containing the chemical history of the acid; the second its action, and that of its base and compounds on organized bodies; the third an enumeration of its antidotes. Another essay on the Prussic Acid has appeared, since the first edition of this work, namely, towards the end of 1819, in America; to this paper I have often referred in the course of this work, and from its pages I have borrowed freely every thing which, being peculiar to its authors, Messrs. Duvignau and Parent, or the result of their recent researches, appeared to me to merit repetition. The paper

in question was presented to the American Philosophical Society, and has been printed in the second volume of the American Medical Recorder, published at Philadelphia. It contains an account of the history, discovery, origin, formation, various modes of preparation, physical and chemical properties, effects of the Prussic Acid, and, in fact, the very division and sub-division of my own work, which is however, on no occasion, either mentioned or even alluded to. The only material part in which Messrs. Duvignau and Parent's paper seems deficient, is in practical illustrations of what they have either copied from others, or stated on their own authority. The two cases to which their medical knowledge of the acid seem to extend, and which are new, will be found in a subsequent part of this work. I have already stated, that Manzoni published a thesis on the subject of the Prussic Acid, under the avowed direction of his preceptor, Professor Brera; his

memoir is written with great perspicuity—pure latinity—and contains a variety of useful information. As to the Germans, I should never end this, I fear, already too much extended section, were I to enumerate the various papers that have been written and published, in the various journals of their country, on the subject of the Hydro-cyanic Acid, within the last eighteen months. I may, however, remark, that no regular work exists amongst them, containing, as far as I have had the means of ascertaining, a full body of information on this medicine; but that, on the contrary, their observations have been chiefly confined to some individual point of practice in reference to the administration of the acid in particular diseases.

I have thus endeavoured to give a complete history of the introduction of the medicine under consideration, into practice, from its earliest, down to its latest period—in doing which, I have been actuated by a great desire of complying with the request of several much re-

spected medical friends, who were anxious to see the scattered details, which exist on this subject, brought within a narrow compass; and also by a sense of duty towards the profession at large, who, ere they assign a becoming place into the materia medica, to a new medicine, have a right to claim every sort of information which may lead to the attainment of that desirable end.

CHRONOLOGICAL RECAPITULATION

OF THE

Facts contained in the present Section,

RESPECTING THE INTRODUCTION OF THE PRUSSIC ACID

INTO

THE PRACTICE OF PHYSIC.

1576. DAVID UNGUAD introduces the cherry-laurel into Europe from Trebisonde.

1731. MADDEN and MORTIMER first call the attention of the public, in England, to the poisonous effects of the cherry-laurel.

1746. BROWN-LANGRISH makes use, for

the first time, of the laurel-water as an attenuant and dissolvent in animals.

1749. LINNEUS announces, in his *Amœnitates Academicæ*, that the laurel-water was used by the Dutch physicians as a remedy in pulmonary consumptions.

1755. DUHAMEL mentions some experiments made on animals, to prove the beneficial effects of the laurel-water in certain cases.

1773. BAYLIES appears to have been the first to try the action of the laurel-water on the human system; and to recommend its use in inflammatory diseases, and abdominal obstructions.

1780-1796. THILINEUS praises the laurel-water in herpetic ulcers—BERGIUS in intermittent fevers—CULLEN as an external application—HANNEMAN in chin-cough—PLENCK in inflammatory sore throat—HUFELAND, HALLER, THUESSEN, SWEDIAUR, SPRENGEL, and others, in nervous diseases, vesaniæ, hypochondriasis, stomach complaints, dispepsia, &c.

1797. Professor BRERA employs the cyanuret (prussiate) of mercury in syphilitic complaints.

1800-1802. BOHN and SCHRADER discover the presence of Prussic Acid in laurel-water, and the bitter almonds.

1801-1806. BORDA, BRUGNATELLI and RASORI employ the Prussic Acid in diseases of high excitement.

1805. EMMERT publishes, at Tubingen, a memoir on the poisonous effects of Prussic Acid in animals.

1807. BRUGNATELLI declares, in his "Farmacopea Generale," that laurel-water and prussic acid are advantageously employed in pneumonia, angina, tubercular cough, catarrh, chronic cough, worms, &c.

1808. COULLON and others, in France, publish some observations and experiments on the action of Prussic Acid; still limiting their inquiries to physiological considerations.

1809-1810. Professor BRERA of Padova,

gives the Prussic Acid in pneumonia and diseases of the chest, generally, with or without suppuration. Also as an anthelmintic. This practice becomes general in the north of Italy, and in some parts of Germany.

1814. SPRENGEL, in his "*Pharmacologia,*" recommends the Prussic Acid, free or combined, in complaints of the stomach, dispepsia, hypochondriasis, &c. To this property of the Prussic Acid may be referred the success which the author of the present work has met with, in the cure of sympathetic coughs, from deranged functions of the liver and stomach, detailed in the edition of 1819; and the obstinate case of dispepsia, complicated with cough, cured with the same medicine by Mr. Thomson, related in the same work. His case concludes with these remarkable words:—"If, therefore, the Prussic Acid produces a more beneficial effect, (than opium) its importance, as an adjunct to tonics, in the treatment of *dispeptic affections,* must be obvious."

1815. Dr. GRANVILLE is the first to call the

attention of the medical profession in England, to the subject of the Prussic Acid, as a remedy in inflammatory and other diseases of the chest. No public notice is taken of the subject for two years.

1816. The result of professor BRERA's practice, with regard to using the Prussic Acid in complaints of the chest, and others, was this year published in his work entitled, " Prospetti Clinici."

1817. Dr. MAGENDIE reads a memoir on the use of Prussic Acid, in pulmonary consumption, (17th November, 1817) before the Royal Institute of France; which memoir Dr. Granville translates and publishes in English, on the following month, again urging the attention of the medical practitioners of this country to the medical properties of Prussic Acid.

1818. MANZONI prints a thesis on the same subject in Italy—and M. FONTANELLES announces, at Montpellier, the good result he obtained in four cases of hooping-cough treated with the Prussic Acid.

1819. Dr. GRANVILLE publishes the result of his practice in this country, with regard to the use of Prussic Acid in cases of consumption and hooping-cough; and extends its application to other complaints in which it had never been administered, such as asthma, sympathetic cough, spasmodic cough of pregnant women—acute pain attending abortion, &c. His work contains a chemical and medical history of the Prussic Acid, with an account of the mode of preparing it, and prescribing it.

Subsequently to the appearance of this work, the Prussic Acid has been frequently employed by English practitioners, and notice has been taken of this important addition to our materia medica, by various periodical publications.—Some months ago, Dr. Magendie and M. Coullon, in France, reprinted their former observations; and Messrs. Duvignau and Parent, in America, published the memoir on this medicine so often quoted.

PART SECOND.

A SHORT ACCOUNT OF THE COMPLAINTS IN WHICH *THE PRUSSIC ACID* HAS BEEN ADMINISTERED; WITH CASES AND PRESCRIPTIONS.

PART THE SECOND.

A short preliminary account and delineation of the various Complaints in which the Prussic Acid has been administered as a medicine—with Cases.

SECTION FIRST.

CONSUMPTION.

"The sudden, and sometimes severe changes of weather, observes Dr. Mudge of Plymouth, to which this climate is subject, are perhaps the most unhappy circumstances attending our situation; and the pernicious effects of them upon the human constitution are so frequently experienced, that *diseases of the breast* may be truly considered as *endemical* amongst the inhabitants of this Island."

That the frequency of these *diseases of the breast,* from such a cause, leads to pulmonary

consumption, no medical practitioner or common observer can deny. Hence we see that this latter complaint is itself of more frequent occurrence in England than in any other country, however unfavorable their climate may be in any other respect. Dr. Young, in his treatise on consumptive diseases, states that the frequency of consumption in Great Britain is usually such, that it carries off about one fourth of its inhabitants. This is a most appalling idea! That of any four persons who may chance to meet together, one should be marked for destruction by this most terrible disorder, is a calculation which may well be pleaded by any practitioner, as an apology for endeavouring to ascertain, what other and better mode of treating this complaint might be discovered. The public, therefore, owes a debt of gratitude to those who have introduced either new remedies against the malady in question, or a more philosophical mode of treating it—and amongst these none seem so much entitled to it than the

physicians, be they of what country they may, who have first proposed the Prussic Acid in the treatment of consumption. For, although, it may yet appear, and I confess to me it is problematical, whether a case of consumption, far advanced in the last stage of its melancholy career, has yet been cured in a decided manner by the Prussic Acid—there is no doubt that in hundreds of other cases where the disease had not yet committed great ravages on the lungs and the system, generally, that medicine has proved the means of arresting the progress of the complaint, and averting the impending fate of the patient. Some such cases will be found in the following pages, corroborated by such evidence as the most sceptical will not have it in their power to question. And here I must beg of those who may be inclined to review these cases, that they will give a *correct* summary of their results to the public, whenever they shall think proper again to bestow their time and attention on the feeble efforts of the

author in this important cause. The critic who writes in the quarterly journal of Foreign Medicine, and who has sneeringly compared the effects of the Prussic Acid to those of the Balm of Gilead, quotes the result of a variety of cases of consumption, related in my first edition, from which it appears, *on the critic's own shewing*,* that of *eight* patients who had taken the Prussic Acid, *two* only had died, *four* had completely recovered, and *two* had been sent abroad after considerable amelioration of every pressing symptom.† Yet what is the corollary which this candid judge draws from such results? *Ecce* "Here endeth the catalogue of consumptive patients; and it exhibits nothing but the *usual lamentable result* of our attempt to subdue this formidable disease; *for if we subtract the number of* DEAD AND DYING,‡ from those which are said to

* Page 193 of the second vol. of Quarterly Journal of Foreign Medicine, No. VI. for Feb. 1816.

† One of these has since returned in perfect health.

‡ Page 194. loc. cit.

have been cured, we have little reason for gratulation on the addition of this article to the Materia Medica, as far as consumption is concerned"!!

And again "*Our own* opinion of this substance, as a medicine in consumption, may be gathered from the preceding observations, and may be expressed in a very few words:—In the early stages of the disease we consider it *useless*, and in the latter *unsafe*." I am not fond of latin quotations, or this would really be the proper place for exclaiming with Brutus, in one of his letters to Cicero. "O Æquissime aliorum studiorum æstimator et judex!" This is another of the many lamentable instances of the facility with which an anonymous writer assumes, in a bold and sweeping assertion, of a negative kind, the right of overthrowing facts brought forward in support of a positive assertion, diffidently, and not boldly advanced. The facts themselves are first misinterpreted, and *incorrectly* explained to the public; and

next an endeavour is made to annihilate their effect by "our own opinion is, that the author knows nothing about the matter"—an opinion without a name, and unsupported by even a tittle of evidence. In a journal so respectable as the one I have named, such conduct is not befitting the high character it has acquired amongst the profession. Why has not the reviewer stated upon what experience, either of himself or of his friends, the sweeping opinion of the inefficacy of the Prussic Acid in consumption, which he has advanced, had been chiefly founded? Can any discriminating reader be expected to rely upon a dogmatical assertion, uttered without any apparent reason, and by an "unknown;" rather than on the language of known medical men, who desire to be judged by the facts only which they have recorded? What will this critic say of the fresh evidence brought forward in the present work in favour of that which he has already denied? Will he retract his hasty decision, or like another liberal

reviewer in a monthly journal, state that such a step would be derogatory from the dignity of an "*ex cathedra* decision?"*

* This is a curious and perfectly authentic anecdote. The work of one of our best, and by far the most erudite physician in London, is reviewed in the medical journal alluded to, and some facts totally disfigured. An impartial friend of the author, without the knowledge of the latter, writes some proper strictures on the review, and requires of the editor, as he had a right to do, to correct, by their insertion in a subsequent publication, the false impression thus excited in the public. The letter was answered a month afterwards, and this remarkable sentence appears in it:—"Indeed, I felt reluctant to refuse admission to your strictures; but I am sure that when you consider the thing in all its bearings, you will allow that *an admission of such an appeal* would have been calculated to injure the reputation of the journal, *by giving the appearance of vaccillation* to its editors!" It was in the same monthly journal that we read, as a reason, for not giving to the public the review of a certain book on midwifery, published last year, that it had a *red* cover, and contained nothing new! Yet the editor may well be challenged to quote a single English work on that branch of medical practice, in which may be found the same arrangement of labours—the same calculations on natural and instrumental labour—the same observations on the number and probability of miscarriages—the same classification of miscarriages—the same mode of treating them—the same result of such treatment; together with the same classification of female complaints, and diseases of children, in a tabular form, as are to be found in that *red* book; and if incapable of finding such a work, then what must the readers think of this editor's candour, erudition, and

It cannot be expected of me in the present work, that I should enter into the history of consumptive diseases. This task has been performed by so many able writers, that I am myself satisfied with referring to them for information. But in order that my readers may be better enabled to judge of the nature of those cases, in which the Prussic Acid has been, ei-

knowledge of the subject? The contents may be "indifferent good"—nay, absolutely bad; and if so, the author would have received, with gratitude, the corrections of the reviewer. But to say the *red* book contained nothing new, was asserting that which could not have been asserted had the book been read; and which if asserted without reading the book, places the reviewer in a situation even more unpleasant than that, in which he may have wished to place the object of his *witty* observations.

But "Fragili quærens illidere dentem, offendet solido." This must ever be the case with those reviewers; who find it a much easier task to criticise, than to write works on practical subjects. Hence I may venture to *predict*, that as soon as the present edition shall have fallen into the hands of the editor of the Medical Repository, the public will, most probably, be favoured with remarks on the "wretched style," "defective language," "want of method," "inaccuracy of description" of the present work, with, perhaps, some gentlemanly personal allusions to the author himself, for having dared, in this note, to set at defiance an *ex cathedra* decision.

ther successfully, or unsuccessfully employed, I shall preface them with a brief description of the complaint to which they belong.

In treating of consumption, instead of following the division of its varieties, as determined by the effects which that disease produces on the lungs, according to some authors; I prefer adopting that which is founded on the remote or exciting causes of the disease. Considered in this point of view, consumption of the lungs has presented itself to my observation in the course of my practice, under the following circumstances; and in each variety, I have used the Prussic Acid with various success.

C. 1. APPARENTLY OWING TO A PECULIAR FORMATION OF THE CHEST, AND PROBABLY OF THE LUNGS —COMMON TO SEVERAL MEMBERS OF THE SAME FAMILY, AND TRANSMITTED BY PRECEDING GENERATIONS.

In this case the disease is generally developed in a similar manner, and at the same age, in almost all the individuals of one family affected by it. The function of respiration becomes

more or less disturbed—the circulation is hurried—there is a gradual increase of animal heat, and a trifling, dry cough, often unnoticed, precedes, for some time, the visible wasting of the body, which at last increases rapidly, and as rapidly carries the poor sufferer to the grave. The functions of the stomach are little or not impaired in this variety of consumption, and the patient enjoys high spirits. If the patient be a female, she will be seen constantly to place her hand on the clothes which encircle her bosom, to pull them from it, as if oppressed by their weight; endeavouring, at the same time, with her extended neck, and the head thrown backwards, to take in a fuller inspiration than usual—in which, however, she does not succeed. Here we find, after death, the lungs either shrivelled and greatly diminished in their natural volume, or partially condensed. Palpitations of the heart and head-ach attend the progress of this disease; but there is *never* any expectoration.

I have tried the Prussic Acid in this case,

not because I expected to prevent a process, which a particular modification of structure seemed to hurry on, with no possible chance of its being arrested; but with a view to allay the nervous irritability, restlessness, and watchfulness of the patient. Opium, in all its shapes, henbane, digitalis, lactucarium, and other anodynes, had been tried by other practitioners before me; but in vain—and I regret to say, that the Prussic Acid did not prove more successful. Perhaps a different result, as to the prolongation of life at all events, might have been obtained, had the acid been used as a prophylactic, rather than a curative remedy.—That the chest may undergo a favourable change in its capacity cannot be questioned, since Dr. Young has brought forward his own case in support of this fact. But the remedies must be applied sooner than I had an opportunity of doing.

C. 2. OWING TO A VITIATED STATE OF THE ANIMAL FLUIDS, NO MATTER FROM WHAT CAUSE, WHETHER SCROFULOUS, SCORBUTIC, SYPHILITIC, OR OTHERWISE.

This may also be transmitted from the parent stock; or may be contracted. If the latter, the disease will shew itself at the age of between 15 and 40 years; if the former, it may appear at any period. Scrofulous tumours and depositions have been found in the heart of fœtuses, and of newly born children, on whom no apparent cause, for such a morbid state of those organs, could have operated.* This species of consumption prevails most commonly in northern countries, and particularly in Great Britain. It occurs, we may say, in three, out of five cases of consumption of the lungs; and I am inclined to think, from several years observation, that many instances of this species of the complaint, which have been ascribed to transmission from the parent stock, have arisen from

* See Dr. Young on Consumptive Diseases. Morgagni de Sedibus, &c. Conradi Anatomia pathologica, &c. &c.

the improper physical education of children, and chiefly from their diet. But this is a subject by far too important to be cursorily treated in this place, and I may, at a future period, be tempted to lay before the public, the result of my observations. This only remark, indeed, I, for the present, will take the liberty of making, namely, that England is the only country where such excessive quantities of butter are used in the daily diet, of even the youngest children—and that mesenteric obstructions, indurated glands, and what has been called the infantile remittent fever, seem to be a few of the bad consequences of such improper diet.—The present species of phthisis, includes what has been called the tubercular and strumous consumption.

There is a peculiar and decided character which a transmitted, as well as an acquired predisposition to this variety of disease, gives to the individual about to be or already affected by it, and which every writer has agreed in

considering as a scrofulous diathesis. This character is made up of various constitutional appearances, the whole of which, however, need not necessarily be present in the same individual. A smooth and fair skin, through which the blood vessels may be seen, particularly on each side of the forehead and neck; light hair, generally, but black hair also, occasionally; light eyes, with or without dilated pupils; long dark eye-lashes; thick nose, about the bridge in particular, and of a varying colour; teeth of a dead pearly white, with a similar tint in the white of the eyes; narrow chest, or what has been called chicken breasted; long fingers with prominent rounded joints, particularly of the last phalanx—muscles lax, and chiefly those of the inside of the arm, and of the legs; enlarged glands under the ear and the lower jaws—precocity of intellect, enthusiasm of genius, delicate sensibility, and a head larger than its natural proportion. These are the principal appearances from which a disposition to

the present variety of consumption may be inferred. Dr. Young, in his erudite work already quoted, very properly observes, that "no man was ever born incapable of becoming scrofulous, and in this sense, every person may be said to possess more or less of a scrofulous taint, which may become mischievous or fatal to all, under improper management, but which, in other circumstances, may easily remain latent through life."

C. 2. *Incipient.*—The symptoms which announce the beginning of this destructive malady are these, and I prefer giving them in detail, because, as their approach is insidious, so is our attention to them inconsiderable. "When cold, or a pleurisy, or a spitting of blood, has already alarmed us," says the author I have last mentioned, "we are not unprepared to expect its degenerating into a more serious disease; and, provided that we do not wilfully shut our eyes, we are likely to be sufficiently aware of the danger that may occur, but it is the

insidious approach of consumption that most requires our caution."—The first symptom is languor, and unwillingness to exert either the mental or bodily powers. Next, there is a marked increase of heat in the palms of the hands and the soles of the feet, owing to accelerated respiration. The breathing is no longer performed with the same ease, and, if the patient ascend a flight of steps, or an acclivity, he stops for breath, and cannot utter but interrupted syllables to the friend who accompanies him. All this is unheeded, or, at most, the patient gets a smile from his attendant, and a "dear me, you are soon out of breath!" Next come the flushings of the face, and occasional chilliness after dinner—upon which the sufferer receives the congratulations of his guests: "one ought to feel cold after meals—it is a sure sign of good digestion." The malady, in the mean while, makes farther inroads, and unheeded, and concealed, marks this and that part for destruction. Still each

new symptom is favourably interpreted, and neither the victim nor his friends, are aware of the approaching danger. The body, however, now shews evident marks of wasting—the pulse is felt, and is found to be quick, small, vibrating. The patient is observed, at last, to cough; and when desired to make a deep inspiration, he experiences more or less pain, or uneasiness, in a certain fixed part of the chest! When these latter unfavourable circumstances have supervened, the first stage of the disease may be said to be decidedly established, "and nothing that art or friendship can perform for the relief of the patient must be left untried."

If the Prussic Acid be given during this stage, even where a constitutional tendency to this dreadful malady exists, and before the suppurating process of the tubercles be formed, a perfect recovery may be expected. This is well illustrated by the following cases:—

CASE I. Miss D——, the sister of an English physician residing abroad, aged 30, tall, narrow chested, and thin, applied to Dr. Magendie, whilst labouring under every symptom of incipient consumption, for which she had been sent to the Continent by her physicians in London. The Prussic Acid was administered in doses of eight drops, and continued for two months. Her cough and expectoration vanished, the fever left her, and she gradually gained a considerable embonpoint. I saw her in Paris, two years ago, perfectly well, and received from herself the history of her case.

CASE II. and III. A young man and a young woman, not related, two morning gratis patients of Dr. Scudamore, consulted him, with appearances of urgent phthisical symptoms, such as harassing cough, wasting of flesh, very quick pulse, night perspiration, loss of strength, puriform expectoration, and the peculiar form of hooked nail wanting the circular shape. He

gave to both the Prussic Acid, up to the dose of ten drops, and had the satisfaction to witness the best effects from the medicine. The patients improved in all respects, and at their last visit thought themselves sufficiently well to omit the medicine. After an interval of eight months, one of them, the young woman, returned to the Doctor, to thank him for the permanency of her cure.*

CASE IV. Master Blackwell, aged ten years, was sent to sea as a Midshipman, in hopes, chiefly, of his overcoming a certain predisposition, as it was then supposed, to strumous consumption. For some time after the constitution seemed to improve, but about three years ago, having spent a very severe winter

* In my first edition, I quoted, from memory, a case which had been related to me in Paris, and which I had been informed was to be found in Manzoni's Thesis. The case, however, appears amongst the many contained in the printed copy, which I have since received from the author, under a somewhat different form, and is inserted in another place.

on the Newfoundland station, the symptoms of pectoral disease became so pressing, that, on the recommendation of the medical officers, and indeed of Captain Buchan himself, his commanding officer, he was sent home. On his arrival in England, I was requested by the late much-lamented Sir W. Farquhar, then ill, to visit him; and my report to that eminent physician was altogether unfavourable. Every mean usually employed in such cases, was resorted to, in the first instance, to no purpose. The boy was wasting daily—the cough and night-sweats had manifested themselves in a decided manner. There was no expectoration approaching to purulency—nor was the abdomen enlarged, or distended. The bowels yielded to proper medicines, and the secretions appeared healthy. The pulse 125 or 30—the skin dry—the respiration difficult—the cheeks flushed. The Prussic Acid was administered with carbonate of potash. In about three days the disorder seemed arrested. He

continued the same medicine another fortnight, and every symptom, except debility, disappeared. He is now in excellent health, and has been so for upwards of two years.—The almost instantaneous good effect which the acid seemed to have, from the first, on the cough, induced the mother, who had been troubled with that symptom during the whole winter, to take, without my knowledge, the same mixture with the Acid, which I had prescribed for her son; and it was only after her cough had wholly subsided, that she acquainted me of the step she had taken; though she knew not of the mixture being any thing else than a common cough-mixture.

CASE V. A servant of Mrs. E———'s, of Upper Seymour Street, was sent to me for advice, in the month of May, 1819, in consequence of a complaint in the chest, which had been, more or less, troublesome for several winters; but which had become more

urgent at the time of his consulting me. He was then in the twenty-second year of his age, tall, slender, of a very fair and delicate complexion, with blue eyes, light hair, white pearly teeth, long pale fingers, &c. He complained of pain immediately under the sternum, a little to the right—coughed, *occasionally*, without any expectoration—breathed with difficulty, and as if heavily oppressed in so doing. The pulse was frequent, small, irregular. There was a clammy moisture on the skin; yet the palms of his hands were burning with heat—his cheeks were marked with spherical flushes, which contrasted singularly with the bright blue tint shining through a pearly-white skin, about and under the eyes. The tongue was of a purplish colour. The appetite good—eating, usually, three meals a day; but the body wasted notwithstanding. The bowels rather relaxed; the abdomen soft, and of a natura size. Being questioned about any chilliness after meals, he answered in the affirmative.

The patient had been occasionally attended by the family apothecary, and had been twice bled, upon which every symptom seemed to grow worse—until, at last, his mistress resolved to send him to me for further advice. Considering his case to be one of incipient strumous consumption, I prescribed the acid, which the patient himself used to procure at Mr. Garden's in Oxford Street. During the first week the cough subsided, as well as the perspiration, but the pulse continued frequent and small. I then gave, alternately with the acid, a mixture with myrrh and carbonate of potash, which seemed to strengthen him; and during the five weeks that the patient continued to call on me, I could plainly perceive the good effects produced by the medicine. At the end of this time the cough had entirely left him—the pulse had been lowered to about 80—and he considered himself so much better that he discontinued his visits. I understand that he applied for some time

longer to the chemist for the acid, and that when he had last been there, he appeared in perfect health.

Case VI. A gentleman, aged 52 years, tall and of a large bony structure, but thin and fleshless—with large blue light eyes, and dilated pupils—long used to daily and loud declamation—of great literary acquirements; applied to me in May 1819, for an encreasing complaint of the chest under which he had laboured, more or less, for several years. His voice hoarse yet loud, fails him in the midst of a sentence, when he seems to struggle against some inward obstruction, raises his shoulders, heaves his breast, and his lips become of a livid hue. He has a pain in the left side of the chest, with occasional palpitations, and disturbed sleep. The appetite and spirits are good. His pulse irregular and always above 90. The tongue white—the fauces loaded with mucus. Expectorates abundantly, but no

signs of purulency can be discovered. He occasionally awakes in the morning bathed in perspiration. He attributes his complaint, in the first place, to a family predisposition to it; in the next, to the great exertions in speaking, which he is constrained to make daily, and has been for many years in the habit of making. He expressed a great desire to try the Prussic Acid, and declined having recourse to any other medicine, as he considered a repetition of what he had tried so often, and in vain, a waste of time. I therefore prescribed the acid, and the effects it produced, at first, may be gathered from what his lady wrote to me on the subject a few days afterwards. "Our patient took the Prussic Acid on Tuesday, and during the night complained of an unusual languor, with depression of spirits; he could eat no supper, though for some time past he had never abstained from it—he slept from between eleven and twelve until about two—he has coughed and raised phlegm much

as usual, though, if any thing, to a less degree: he feels a great tendency to sickness, heat, and a sort of giddiness, with considerable restlessness," "He has fancied his respiration somewhat more easy, notwithstanding all these symptoms, and the phlegm somewhat diminished." Some days after the receipt of this letter, the patient called upon me, and it was agreed that he should resume the acid under proper regulations. The account which the patient gave of its effects in about a week, was as follows:— "Feeling myself exactly as when I began to try the effects of the Prussic Acid, I am inclined not to continue it, or take any other medicine in the intermediate time, until the latter end of July, when I can give it a *fair chance* at some watering place in QUIET. Sometimes my breath is better, and the discharge of phlegm not so copious; in other respects I am very well, notwithstanding the arduous and incessant exertions of my profession." "I shall not venture to try the other medicines you have

recommended to me, as common medicines leave me where they found me, and from the *Prussic Acid alone* I can hope to be essentially benefited." In the following month of July, I had the pleasure of seeing him considerably improved; though not so much as I should have expected; but I have since learned to bear many such disappointments in the administration of this medicine, some of which, however, are not easily to be accounted for.—Whether this patient did or did not resume the Acid in the summer, as he intended, and if so with what success, I am not prepared at this moment to state. Living as he does at some distance from the Capital, and having myself been absent for a few months from England on a professional engagement, it has not been in my power to follow this gentleman's case as closely as I should have wished. But an opportunity will soon occur of seeing him, having received a kind invitation to visit him; and I know that

for the last twelve months he has continued to attend to his laborious occupations.*

CASE VII. Miss C—— had from her childhood exhibited signs of scrophula, though born of healthy parents. The glands of the neck; occasionally, those of the groins; and, in one instance, those under the left arm had become swelled, painful, hard, but had never suppurated. On some of these occasions there was a slight cough present, which was attributed either to teething or to worms. Her appearance, however, denoted perfect health, and no uneasiness was felt respecting her. Towards the critical period of fifteen, after no inconsiderable sufferings, the glandular swellings disappeared almost suddenly; and in a few months afterwards menstruation became fully

* This opportunity has occurred since the Case was sent to the press. Though not conquered, the disease does not seem to harrass the patient as much as before; nor does it preclude him from attending to the arduous duties of his profession.

established. The young lady was now considered as perfectly healthy, and no farther attention was paid to her. As soon, however, as the formalities of etiquette required her presence in the gay world, and she was surrendered to the caprice of fashion, it was discovered that she could not well bear the fatigues of the night, and that neither the prolonged hour of rising on the following days—nor the measured and choice diet—nor the drive in the open landau were sufficient to stay the wasting effects which such a mode of life had visibly produced. A *slight* cough again made its appearance, accompanied with a *slight* pain in the chest, and a *slight* oppression in breathing. She was *slightly* affected when walking fast, or ascending the stairs; and she felt, though *slightly*, every variation of the atmosphere. The symptom which first alarmed the parents, was emaciation, and this seemed to proceed so fast, that Miss C—— from being an object of pride, became soon an object of

pity and grief to her friends. A physician was called in, who thought that the young lady suffered from diabetes, and ordered a treatment accordingly. A second was soon afterwards consulted, whose more particular study was supposed to be the unravelling of mysterious complaints, and particularly of the chest —for, by this time, a disease of that part was strongly suspected by all. His opinion confirmed the fears of the friends, but his treatment did not allay them. In the month of June 1819, that is, eighteen months from the first time of taking the alarm, the patient was supposed to be in a consumptive state, and under these circumstances, I was requested to give my opinion. Mine could not but be in unison with that of the medical gentleman who preceded me; and I strongly recommended the use of the Prussic Acid. Indeed my opinion had been asked *specifically* as to whether that medicine was admissible in the case of Miss C——. To describe all the symptoms under

which this young lady laboured at the time of her first beginning the use of the acid, would be to repeat almost every symptom which has been before mentioned in the outset of this section. Suffice it to say, that she was considered as being in the first stage of tubercular consumption. I visited the patient, occasionally, from June till August, and derived great satisfaction, at the amendment which I thought I could perceive in her general health. My subsequent absence from England, prevented my following the case through its various stages; but on my return from the continent in November, I had the pleasure of learning by letter, that my patient, then in the country, had, during the autumn, lost her cough and oppression on the chest—that she had gained a degree of *embonpoint*—and that at the approach of the bleak season, she had not experienced, as she had done the preceding years, the ill-effects of cold and wet weather. The acid had been discontinued for three months,

and resumed in February of the current year; when, after a fortnight, it was altogether abandoned, the young lady being in all respects free from complaint. In this case, the acid never produced either sickness or dizziness. It seemed to act gently on the bowels for a few days, and not longer—and was administered, both when it was first taken, and when it was resumed, for the first week, in doses of one drop every two hours in a common camphor mixture. This mode of prescribing the acid I have found to be preferable to that of limiting the use of the medicine to three times a day; when, if the whole quantity be pushed, from necessity, to eighteen or twenty drops, the patient is forced to take six of them at a time; a dose which seldom fails to produce sickness, and seems to irritate rather than to act as a sedative.

CASE VIII. A lady above 60 years of age, the grandmother of several children, had been troubled for several years with a difficulty of

breathing and cough, which, on reaching the period of menespausia, became very troublesome, and excited some alarm. In the early part of her life, she had enjoyed excellent health, but signs of an unfavorable predisposition to glandular obstructions and enlargements, had manifested themselves, at various periods, and have since remained stationary. Several glandular swellings were shewn to me on the second visit, in February, 1820, occupying various parts of the body, but particularly the neck—the bosom—and each side of the chest. Remedies of all description had been resorted to without effect—some indeed, which had been immediately directed to the removal of the glandular swellings, proved pregnant with mischief and were soon abandoned. With the cough, there was dyspnœa, and a scanty thick expectoration. She complained of fever at times, and her pulse, on my first seeing her, was full, hard, and above a hundred strokes in a minute. The skin dry—the tongue also dry,

roughish and of a pale tint. Slept uneasily, and at interrupted intervals. Her bowels had for a long time been confined, so as to render the use of daily medicines necessary. There was no decided pain in any part of the chest; but much uneasiness, impossibility of making a deep inspiration, palpitations and flutterings—with a kind of spasmodic attack at times, which rendered her existence truly miserable. An opinion had long before been given, that this lady was labouring under some tubercular formation in the lungs, an opinion which external appearances, and the symptoms already described, seemed greatly to uphold. Occasionally the cough, expectoration, fever, and morning perspiration, with a hard pulse, would gradually become so alarming, as to induce the attending practitioner to prescribe bleeding. This operation was about to be again performed when I saw the patient, and it was determined, in preference, to give the Prussic Acid a trial. From the notes of my first visit, I find that

her pulse was hard and frequent—that she had had several attacks of chilliness and fever—that she slept ill, and expectorated a sort of grumous yellow and greenish matter, which when thrown into cold water, went to the bottom; and when acted upon by boiling water, did not shrink, so as to appear smaller in its volume.* I ordered the Prussic Acid in the dose of 10 drops for the 24 hours—powders composed of tartarized antimony and supertartrate of potash—and some aperient pills.

The relief she derived from this treatment became evident in a very few days: the cough soon afterwards ceased altogether, and with it the expectoration. I first saw my patient on the 15th of March, and by the 30th I discontinued my visits. She is now in her former usual state of health, and acknowledges the great benefit she has derived from the medicine in question.

* I beg to suggest this among many other distinctions between pure mucus, and decidedly formed pus.

CASE IX. Mademoiselle R——, aged 20 years, of a plethoric constitution, was suddenly attacked with acute pains at the pit of the stomach, accompanied by strong paroxysms of cough. As the family, and indeed the patient herself, had been subject to gout and rheumatism, I prescribed sinapisms, with warm baths to the feet, which proved of no avail. Narcotic, antispasmodic and other medicines were administered with no better success. She was ordered to drink asses milk for some time, but to no purpose; and Mademoiselle R—— now became alarmed, and thought herself threatened with consumption. Her personal appearance, and her embonpoint had suffered from the symptoms. I desired her to take twelve drops of the Prussic Acid, procured at the manufactory of M. Vauquelin, in six table spoonsful of an emulsion of gum arabic, when at the end of some days, the cough diminished considerably. Elated at this partial success, the patient took three drops of the acid for a dose seven times

a day, and continued to do so for some time; at the end of which, her cough had wholly disappeared, and the pain occurred rarely, and then by no means with so much intensity. *(From Dr. Kerkaradec's communication to Dr. Magendie. Edit.* 1819.*)*

CASE X. Professor Brera gave the Prussic Acid to a man aged 34 years, labouring under pulmonary consumption, while in its first and inflammatory stage, with complete success.—These are Manzoni's words, page 15, of his Thesis:—"Phthisico hujuscemodi annorum triginta quatuor acidum prussicum in emulsione arabica, Professor Brera obtulit, et sic inflammationem fugavit, quæ identidem aliquod in tuberculum prodire conabatur, prætereaque ærumnoso illi longius vitam largivit; nam sputorum quantitas decrevit, eorumque purulentia in melius se commutavit; quæ originem ex tuberculis ducebat suppuratis, antequam æger Clinicum Institutum subiret."

Case XI. and XII. The same author reports the cases of two women who had been admitted into the Clinical Infirmary, with all the symptoms of incipient pulmonic consumption, and who, by means of the Prussic Acid, left it quite well.—"Nec dissimilis sputorum imminutio, atque in melius conversio in duabus fœminis, catarrho chronico ad phthisim propendenti affectis, contigit. Utriusque, primum, sputa puriforma et copiosa erant; ast acido prussico administrato, simplicem ac paucum præ seferebant mucum, ita ut illæ integra fere valetudine ex Instituto Clinico discesserint."

In the pamphlet which Dr. Magendie published last year, subsequently to my own, I find the following brief account of his practice with regard to the use of Prussic Acid in pulmonary consumption "au premier degrè." These are his words—

"Mes tentatives, n'ont pas été également heureuses; dans plusieurs cas j'ai eu la dou-

leur de voir de phtisies continuer leur marche malgrè tous les secours de l'art, parmis lesquels je ne manquais pas de faire entrer le medicament sur lequel je fondois tout mon espoir."

"Mais c'est avec une satisfaction facile à comprendre, que j'ai vu *completement cesser les symptomes de la phtisie* dans trois circonstances differentes, chez trois enfans de quâtre à six ans, une demoiselle de quinze ans, une autre de vingt ans, un jeune homme de vingt cinque ans, et un vieillard de soixante-six ans."

C. 2. *Confirmed.*—When this species of consumption, however, has made the progress, which new and more distressing symptoms, too plainly indicate; and when the suppurative stage of the tubercles has fairly began, the hopes of recovery, from the effects of the Prussic Acid, become every day more faint, until at last, nothing but palliative effects, and those of short duration only, can be expected. Still there can be no doubt, that even at a very

advanced period of this complaint, alleviation of symptoms, improvement, and even recovery can, in some few instances, be looked for; since cases have occurred where the life of a patient, under the most unfavorable circumstances, has been redeemed by the action of the medicine in question, and in some other cases, by other medicines also, as Dr. Laennec has proved in his recent and excellent work on pectoral diseases. The symptoms by which the advanced state of strumous consumption may be distinguished, are nearly similar to those which characterize the same stage in every other species of the disease. I cannot do better than describe them in the words of Dr. Young. "As the disease advances, the emaciation, and the other symptoms of a well formed hectic fever continue to increase; the cough becomes more and more observable, being at first dry, but afterwards accompanied by an expectoration of mucus, which by degrees acquires more and more the character of pus, though it is never completely purulent, or without a con-

siderable mixture of mucus; and the breathing, as Bennet has observed, is frequently accompanied by a sound like the ticking of a watch. The teeth often become more transparent than usual, and the sclerotica of the eye of a pearly whiteness." To these I must add, as the result of my own observation in a number of cases, that when the cough becomes troublesome from the advanced state of the complaint, it is not unfrequently followed by vomiting of the food, a symptom which easily distinguishes the phthisical from the catarrhal cough. If a loathing of the ordinary food, and a longing for a variety of substances, supervene about this time, announcing the vitiated state of the digestion, then the body wastes still more rapidly, and the patient is shortly reduced to a mere skeleton.—The morning sweats are incessant—the pulse is wiry, smart, and above one hundred and thirty.

"As the disease hastens to its fatal termination, says Burserius, sores break out in the mouth, palate, and fauces, occasioning pain and

heat when the patient attempts to swallow—the voice becomes hoarse, nay is sometimes entirely lost, a fœtid smell proceeds, not only from the mouth, but from the whole body—the hair falls off—the eyes become hollow—the nostrils thin—the feet and hands swell—the bones are covered almost only with the skin—the expectoration stops, and in females there is, almost universally, amenorrhœa. The discourse becomes incoherent—the cough ceases, but the greatest difficulty of breathing and anxiety are present—the pulse is languid and weak, intermits, and at length ceases—until death, while the patient still entertains some hopes—for in no disease are the patients more buoyed up with false hopes—gradually comes on, and puts a period to his sufferings."—It is singular, that in fatal consumption arising from scrofulous causes, this buoyancy of hopes, this conviction of a better prospect, haunts the imagination of the patient almost invariably; whereas the reverse occurs where phthisis follows either pneumonia,

or accidental inflammation of the lungs and pleura from a local injury. In this case, also, the faculties remain entire to the last — the senses are acute, and the patient is perfectly alive to the danger and distress of his situation. Here, likewise, as Dr. Young has stated it, "the closing scene is often painful, but it sometimes consists in the gradual and almost imperceptible approach of a sleep, which is the actual commencement of death."

I shall now proceed to give, indiscriminately, cases of confirmed consumption from the causes generally alluded to in this section, which have terminated either successfully or unsuccessfully, or in which the symptoms have been for a time palliated, under the use of this medicine.

CASE XIII. A lady from Lyons, now residing in Paris, of a constitution eminently bilious, after having experienced several misfortunes, was, in 1814, attacked by all the symptoms which

characterize phthisis in its first stage. Circumstances not allowing her to attend to her health, she neglected it, until the month of January, 1815, when the disease having made great progress, she consulted Dr. Magendie. He found her labouring under all the symptoms of the second stage of tuberculous consumption, with a cough returning incessantly, and a slow continued fever preying upon her and undermining her existence. The Prussic Acid was recommended, and taken in the dose of from six to ten drops in 24 hours, diluted. The medicine was continued for about two months. From the first day the cough diminished, the patient slept, and without increasing the dose beyond ten drops in the 24 hours, all the symptoms of the disease disappeared, the breathing became natural—the cough, expectoration, and sweats ceased. In short, the lady was perfectly cured, and has never since experienced any symptoms which indicate the least disposition to a relapse. Her lungs, only,

have become very sensible to the influence of atmospheric variation.

The above case was drawn up and published by Dr. Magendie in 1817—and in his pamphlet of 1819, alluding to the same case, as well as to that of Miss D——, already quoted, he observes: "Je dirai pourtant que les deux dames, sujets des observations rapportées dans mon memoire, et dont la guerison date de quatre ans, continuent de présenter une santé parfaite."

CASE XIV. Mr. P——, residing in Bridge Street, Blackfriars', called upon me, about two years ago, in consequence of having read the paper on Prussic Acid, published in the Journal of the Institution. He expressed a wish that I would see his younger brother, who was lying at home, weak, emaciated, almost incapable of moving, and suffering from some disease in the chest, in the treatment of which, every remedy employed had proved unsuccessful. On visiting

him the next day, I found he had passed a very restless night, with an incessant cough, and copious expectoration. A distressing sensation of heat had been present during the first part of the night; until, exhausted by the continued cough, he had sunk towards morning into a kind of doze, which, far from refreshing him, added to the oppression of his chest and head, and increased his extreme debility; being always accompanied by a profuse and chilly perspiration. He had continued in this state for nearly nine months. The effects of these symptoms were evident on his countenance, and his whole system presented characteristics of the greatest distress. I recommended the Prussic Acid; in doses of six drops every four and twenty hours, to be increased a drop every two days. The success of this treatment became visible on the second night after he began to use the acid. He slept several hours, coughed but seldom, and the sweating ceased. The beneficial effects of this change were soon perceived in the correspon-

ding amelioration of every other symptom—in the return of strength, and a desire for food, instead of a constant nausea, with occasional vomiting, from which he had been suffering before. He went on taking the acid for several days, with the same success; and when at last he discontinued it, his disease, though not cured, was so far palliated, as to render life tolerably comfortable. In this case the expectoration was decidedly purulent.

CASE XV. A gentleman from Staffordshire, requested my advice on the subject of his daughter's complaint, which the medical attendants had declared to be phthisis pulmonalis. A description of all her symptoms was forwarded at the same time, in confirmation of that opinion. Nothing could be more discouraging; yet, as her night sufferings were described as most distressing, I thought that the acid might, at least, give some relief, ease the pain and cough, and promote sleep. She was, therefore,

directed to take eight drops of the Prussic Acid in four and twenty hours, diluted as usual. At first it seemed to disagree with the stomach; but on combining a small quantity of bark and mucilage of Acacia with it, she was enabled to continue its use for eight days, at the end of which her cough and pain in the chest had vanished, and sound refreshing sleep returned. The very great prostration of strength present in this case, before the acid was employed, was the cause of its producing, after the second day, such a depression and lowness as threw her family into some alarm. This, however, was only temporary; and from the moment she began to recover from that state of languor, the improvement in every symptom of her disorder became daily more evident. She had been threatened with imminent dissolution but a few weeks before she took the Acid; and she is now, by my advice, on her way to Malaga, in much better health. Her disorder is not cured, but subdued. Where there is disorganiza-

tion of the lungs no cure can be expected; but life may be prolonged, and rendered comparatively comfortable.

In again bringing this case before the public, I feel great pleasure in being able to add that, the subject of it has recently returned to England, to all appearances in excellent health. She still suffers, occasionally, from a pain in the right side of the chest, when in the recumbent posture; but every other symptom has vanished, through the beneficial influence of the climate of Malaga, and, probably, the occasional continuation of the Prussic Acid. I cannot, in this place, omit to state that, from a residence of several months on the coast of Spain, previously to the late wars and commotions which have desolated that country, I can confidently recommend the town and neighbourhood of Malaga, with the adjacent romantic retreats of Grenada and of the Alpujaras, during summer, as the most desirable places of residence in the Mediterranean, for consumptive patients.

Alleviation of symptoms, however, is often the only gratification which the person who prescribes the Prussic Acid in cases of decided disorganization of the lungs, is likely to obtain. But even this is worth the attainment.

CASE. XVI. To a lady aged 50, who had, for some weeks previously to my seeing her, been gradually wasting with hectic fever, incessant cough, and occasional hæmoptysis, I gave the Prussic Acid, beginning with eight drops as the total quantity for the twenty-four hours, and increasing the dose, usually, at the rate of one drop per diem, up to twenty-four drops. The following was the exact form of the mixture.

℞ Acid. Prussici min. viij.
Mist. amygdal. f℥ iv.
Decoct. Cortic. cinchonæ cordifol.
Aquæ menthæ virid. āā f℥ ij.
Syr. tolutani f℥ ij. F Mistura, cujus capiat partem quartam 6ta quaque horâ.

At first the effects seemed very promising. There was a speedy and general improvement. The appetite, which had been lost, returned; the cough subsided; there was some abatement of the expectoration, which was manifestly puriform; the hectic fever and attendant perspiration abated; the sleep improved; the spirits of the patient were elated, and she became sanguine in her hope of recovery. I did not, however, allow myself to indulge in such flattering feelings; there was too much evidence of advanced diseased organization of the lungs to warrant any expectation of cure; and this was proved by the fatal termination of this case in about two months. After a month, the Prussic Acid began to disagree; sometimes vomiting, at other times diarrhœa, occurring; the former effect being, apparently, produced by the medicine, and the latter evidently increased on the different occasions of renewing the acid.

CASE. XVII. I next administered the acid to a gentleman aged 45, who had for many months been languishing with symptoms of phthisis. I never witnessed a more harrassing cough. At first he was *charmed* with the effects of the medicine; but I did not see any real improvement. When the dose for the twenty-four hours was raised to sixteen drops, his stomach would no longer retain the medicine; and it was to no purpose that I attempted, once more, to repeat the use of the acid in a still more simple vehicle. With this patient I also made trial of the tar vapour, as recommended by Sir A. Crichton. I could not, however, perceive any good effects from its use; and this unfortunate gentleman, as a last resource, adopted the expedient I suggested of a change of climate, and went to Nice, whence I have since received no tidings of him.

I am indebted for the last two cases to Dr. Scudamore, who will, I am sure, permit me to

observe that no sufficient reason is given by him for attributing the sickness, which is said to have occurred in both the subjects, to the action of the Prussic Acid, after this medicine had been used for some time. I do not deny that sickness at the stomach has been occasionally, and I believe justly, ascribed to the early use of the Prussic Acid; but in cases of confirmed tubercular consumption, vomiting and diarrhœa are *necessary* symptoms of the disease, and will both occur, even where no medicine whatever is given. The gentleman, whom I mentioned in my XIV. case, could scarcely speak to me for more than ten minutes, without bringing on vomiting. When the Prussic Acid produces nausea or even vomiting (and it is the same with regard to dizziness, which it will induce in some few individuals) those symptoms take place on the first or second day after the exhibition of the medicine, unless, indeed, the dose be greatly augmented; and in such cases I strongly recommend that it should be abandoned im-

mediately, for there is no chance of its ever again agreeing with the patient. Of about three or four hundred cases of the exhibition of this medicine, to which my personal experience extends, five or six have occurred, in which the acid, evidently from a particular idiosyncrasy, produced sickness at the stomach on the first day it was taken; and in no other was any nausea excited, when it had, to all appearance, agreed with the stomach for the first week. This peculiar effect of the Prussic Acid on the stomach of some few individuals, *on its first exhibition*, is wholly independent of the quantity taken. The fox-glove which has, likewise, been so much commended in the treatment of pulmonary complaints, produces sickness in the proportion of ten to one when compared to the Prussic Acid. Indeed I have seldom heard of or seen cases in which the fox-glove had not produced either nausea or actual sickness.

As to the effects which the acid produces on

the bowels, my subsequent experience has enabled me to say, that in some cases, it is gently aperient during the first few days of its exhibition; and that it never constipates, or calls for the combined action of any strong purgative after long use; but that on the contrary, the mildest aperient medicine given in conjunction with the acid, will be sufficient on such occasions, to promote the necessary evacuations.

The palliative, and so far desirable, effects which the Prussic Acid produces in the worst and most desperate cases of disorganization of the lungs, are even more strongly illustrated by the following cases. That the fatal termination of the disease was actually suspended, for some time, in both of them, there will appear no reason for doubting to those who will give them attentive consideration; and if the acknowledgments of a self-deceived sufferer and of his friends, can be brought forward in support of this assertion, even that evidence will not be found wanting in the following cases.

Case XVIII. The little good effects which the Prussic Acid seemed to produce on the complaint of the gentleman mentioned in Case VI. did not prevent him from recommending his brother to my attention. I found the latter in a much more alarming state; for, in addition to the more advanced stage of the disease, he was labouring under the ill effects of a fistula in ano, which, as his brother expressed it, had been injudiciously performed upon two years before. It would be only a waste of time to attempt to describe the symptoms exhibited in this instance. They were of the worst kind, nor were they likely to be improved by the closest attendance to sedentary occupations in a Public Office. The disease, in every other respect, seemed to have originated in the same manner as that of his elder brother, and to arise from a similar predisposition. The habit of body, also, was much the same in both cases, but the wasting of flesh more considerable in the present instance. On his addressing

him to me, his brother stated, that he had found him much worse than he had expected. The acid was administered precisely in the same quantity as in the case of his brother, and far from producing any symptoms of depression, it seemed to add fresh vigour and spirits to the, till then, languid and afflicted patient. The cough was the first symptom to yield, then the profuse perspiration ; and the pulse, before frequent and small, became strong and more natural. His appetite improved—the expectoration diminished—the pain in the chest was only felt on strong pressure being made—and the head-ach was entirely removed. Anxious that he should profit by this first amelioration, which all the other medicines he had taken had not before produced, I recommended a total abstinence from business and mental exertion, and the country air. My advice was followed, and after having lived for a few weeks in the neighbourhood of his brother, I had the satisfaction to be informed by a letter from the latter, " that his brother, he was happy

to say, continued much better, and had not taken any medicine for some time." Some months afterwards, however, he fell a victim to his complaint.

Case XIX. In the month of April, 1819, Sir H. Peyton addressed to me a letter recommending one of his coachmen, who for some time had been labouring under decided symptoms of pulmonic disease. On my first seeing him, I found him harrassed with a continued cough, which invariably increased on the approach of, and lasted during the whole, night, accompanied by abundant expectoration, and followed by profuse colliquative sweats in the morning. He had insensibly wasted, and presented indications of great internal suffering. The oppression at the chest was considerable, and augmented on every effort to make a deeper inspiration than usual. The face was shrunk, and much emaciated. The eyes of a vivid brightness. A small circular spot of crimson appeared at times in the centre of each cheek,

when his pulse, always above one hundred, acquired increased velocity. Much of the expectoration was decidedly pus. The patient enjoyed high spirits, and, but for the kind interference of his excellent master, would have mounted the box as often as his fellow servant, and performed every other laborious office of his station. When indulged in his wishes, he paid severely for his temerity, and often sunk down quite exhausted from exertion. To account for this general and incessant *malaise*—for this debility and almost entire want of power—for the encreasing emaciation, the patient, who never admitted the possibility of consumption, declared, that his physicians (for he had consulted others before) knew nothing of his complaint. Being anxious to ascertain, as far as lay in my power, the extent of his malady, I watched him, and examined his expectoration for a few days previous to my prescribing any medicine. On one occasion, I observed streaks of blood in the matter brought up after a short easy fit of coughing. No doubts remaining of the patient

being in the advanced stage of tubercular consumption, I prescribed the Prussic Acid, with the view of alleviating some of the symptoms of the disease, and of prolonging, if possible, the period of his existence. I wrote to his master, at the same time, that I considered his servant to be in a state of much danger, and that little was to be expected from the Prussic Acid, where the disease of the lungs was so far advanced. As if to mock the physician, however, the complaint, under the use of the Prussic Acid, taken daily and for a month, so far improved, that, on the approach of summer, the patient considered himself as well, and resumed his ordinary occupations. In the house, he was supposed to have quite recovered, and it was believed that his life had been saved by the timely use of the new medicine. An opportunity having occurred about this time for my seeing him, in consequence of my being called to one of his fellow servants, I confess I was struck with his great improvement, and the apparent good state of health he seemed to

enjoy. Even the pulse had come down to its natural standard. My prognostic, of course, became a subject of merriment, and I rejoiced at it. Some time after this, on the approach of winter, his master, who had been absent from home with him, was returning thither in his carriage, when the latter, without any apparent cause, or exertion, not even that of driving, was on a sudden taken ill with pain in the chest, quick prostration of strength, and spitting of blood. He was that day left in the care of the master of the inn, and of the medical man of the place, who bled him; and on the following morning he expired!

The following case of confirmed consumption, in which the Acid was employed with a very different and better result, will be read with great satisfaction.

Case XX. Mrs. R. aged 37, the mother of several children, of a phlethoric diathesis (whose mother died of tubercular phthisis in her 38th

year, and her only brother in the meridian of life) was attacked with pneumonic inflammation during her convalescence from a premature accouchment. The symptoms were severe and particularly affected the trachea and superior part of the thorax. The usual means were adopted with success, and although almost all the appearances of the complaint disappeared; still a trifling cough remained, and she occasionally complained of a dull pain in the right side, and of a troublesome constriction of the superior part of the trachea, affecting her, particularly upon awaking in the morning, or on passing into a denser atmosphere.

The continuance of these symptoms, with an increase of pain and cough, connected with an acknowledged hereditary and constitutional predisposition to phthisis, naturally excited the most serious apprehensions, and an antiphlogistic regimen, and the most approved therapeutical means were adopted and rigidly followed for many weeks, without any obvious benefit; on

the contrary, during the last fortnight the symptoms had evidently become worse; for there was now a constant pain in the chest; with increased arterial action, and great difficulty of breathing, upon any slight exertion. The spasmodic affection of the trachea was more acute, and sometimes attended by a sense of suffocation; the cough was more frequent; and expectoration, which had hitherto been scanty and frothy, had now become more copious and puriform.

Facial flushes, with previous rigors, and a burning sensation in the hands, frequently occurred, particularly after eating; and evening exacerbations were but too obvious—the febrile symptoms increasing till after midnight and terminating in profuse colliquative sweats. The bowels, which from the first had been costive, now shewed great tendency to diarrhœa. The rapid progress of these symptoms, and the inefficacy of the means adopted, even to check them, induced me to solicit from Dr. Granville a supply of the Hydrocyanic Acid, which was

immediately administered, in the following form, with the happiest effect:

℞ Mist. Amygd. f℥ vj.
Acidi Hydrocyanici min xij.
Syrupi Tolutani f℥ iij.
F. Mistura cujus capiat partem quartam sextâ quaque horâ.

In a few days there was evidently an amelioration of the symptoms, those which appeared first to yield to the salutary influence of the Acid were the febrile flushings, spasmodic constriction of the trachea, and cough. By degrees the exacerbations became less apparent; hectic flushes very seldom occurring. Expectoration became freer, decreased in quantity, and soon entirely disappeared. In short, the progress towards convalescence was more rapid than the most sanguine person could anticipate, and at the end of three weeks, from the first administration of the Acid, it was fully established. The Acid was increased two drops

every day till twenty-eight were taken daily. The patient was almost constantly under my eye, yet I could not perceive any alteration in the pulse upon the Acid being taken; although I gave the medicine myself, with the most scrupulous punctuality, and watched its effects with anxious solicitude. Increased arterial action, during the first week's use of the Acid, frequently occurred; but this, I conceive, may have been the effect of the disease rather than of the medicine, with which it certainly appeared to be totally unconnected. The patient sometimes complained of faintness while taking the Acid, but I doubt if this symptom was the consequence of its administration, as similar sensations were frequently complained of previous to its use. The Acid was continued for a fortnight longer, in smaller doses and at longer intervals, in a filtered infusion of cascarilla, at which period not a vestige of this alarming disease remained; and it is with the greatest satisfaction I can say, that this patient has

never experienced the slightest return of her pulmonic complaint, although she has again aborted at the same period of gestation, and has suffered severely from that unhappy circumstance.

This case, with some others which will be found in the course of this work, I received from Mr. Rudland, a medical practitioner at Dartmouth: and I take this opportunity of publicly thanking him for his polite attention in communicating to me the result of his experience, in regard to the medicine under consideration. The anxiety which I must naturally feel respecting the proper application of the Prussic Acid, had induced me to apply to a great number of medical men, who, I knew, were engaged in giving that medicine a trial. My request to them was, that the whole and undisguised truth might be told of its success or failure in their practice, and I am happy to say, for the honour of the profession, that the

call had been pretty generally attended to. In troubling them with my application, I could only have the good of the public in view; and to suffer that application to go altogether unnoticed, would have proved a total disregard of a just feeling, more than any indifference which it might have been the wish of certain practitioners to shew towards the individual who expressed it. How indeed can it be expected that we should come to a right conclusion on the subject of any medicine, if the joint testimony be wanting of those among the profession, who are most familiar with its use? And how, is that spirit to be styled, which can induce persons skilled in such a practice, to withhold the benefit of their testimony from the public? So many anomalies present themselves in the properties of almost every important article of the materia medica, that nothing but a collection of facts respecting its action on different constitutions, can enable us to form

a correct judgment of the extent of confidence we ought to place in it. Examples of such anomalies are not wanting, even in the case of the Prussic Acid. While numerous practitioners join in acknowledging its beneficial influence, when properly employed — a physician of great eminence, who has never tried it, denies that it can have, *prima facie*, any such effect! Another uses it in one instance only, and from *such* an experience concludes that it is a mischievous preparation. Two medical practitioners of great respectability informed me, not longer since than last month, that on pushing the acid to six drops for a dose, sickness and other symptoms of uneasiness were invariably produced, and this in two distinct cases, in which I was afterwards consulted— while a few days afterwards another physician, whose eminent literary character is universally acknowledged, assured me that the acid was administered to a patient under his direction, up to *nine* drops for a dose, every three

hours, with no more effect than if as much plain water had been exhibited! What are we to think of this jarring evidence? Nothing, but that the evidence itself ought to be still farther multiplied, and that until that be done, it would be as presumptuous for the author to assert that the Prussic Acid will never be found to fail in affording relief in the diseases for which he has proposed it; as it would be preposterous in others, with none but a scanty experience, to condemn it either as *useless* or *unsafe*.*

* This is the letter which accompanied Mr. Rudland's cases. —"Dear Sir, when I requested a supply of the Hydro-cyanic Acid, I promised to give you a candid relation of its effects in my practice, whatever might be the result; and it is with a lively satisfaction, I send you the following cases, in which, (as well as in many others, equally, if not more interesting) I have given the acid with the most unequivocal success. The accompanying cases are merely copied from my notes, *not selected;* but the first in which I gave the Hydro-cyanic Acid: and in relating them, I have purposely avoided all theoretical observations, and adhered closely to facts.

"If you think them worthy of publication, either in your second edition, or in any medical periodical work, they are at your ser-

CASE XX. In the beginning of the year 1819, Mr. ——, a merchant residing in *Rue de Seine*, at Paris, saw one of his children, eight years of age, die of phthisis, who, from its

vice, provided you will give them that *literary polish*, which I feel they require, before you allow them to meet the eye of the public. I have given the Hydro-cyanic Acid in several cases of spasmodic cough in old people, in pneumonic inflammation in children, and in two cases of severe cynanche trachealis, with the happiest results. In one of the latter, its use was preceded by emetics, topical and general bleedings, blisters, &c. but still the symptoms continued to an alarming degree, and the spasm of the muscles of the glottis so severe, as to threaten suffocation. The beneficial influence of the acid was soon apparent, and the young patient rapidly recovered. One of the cases of cynanche trachealis, in which I gave the Hydro-cyanic Acid, was particularly striking, as well from the severity of its symptoms, as from the coincidence of other circumstances. Four children in a neighbouring village were attacked, nearly at the same time, with severe symptoms of croup, three of whom fell victims to the disease; although in two of the cases, the most active and judicious treatment, agreeably to the general mode of combating this disease, was adopted by a practitioner of the highest respectability and extensive experience.

Believe me, dear Sir,
Your sincere Friend,

W. H. RUDLAND."

Dartmouth,
October 10, 1819.

infancy, had been troubled with a scrofulous affection. Lately, a sister of this child, remarkable for the beauty and freshness of her colour, and possessing the appearance of the most perfect health, lost, by degrees, her appetite. She became gloomy and peevish, and a small cough came on, to which little attention was paid. It was thought that the country air would be of service to her, and she was accordingly removed to a country situation. But, after staying there for two months and a half, she returned from it, with a slow fever, attended with copious sweats, looseness of bowels, and a small fatiguing cough, especially during the night and in the morning, returning in frequent attacks at other periods of the day. The emaciation of the little patient was considerable, and formed a remarkable contrast to the plumpness which she possessed a few months before; the parents, whose family had been cut off by pulmonary consumption, could readily recognize in their daughter, the disease

by which their first child had been carried off. They therefore put her under the care of Dr. Magendie, who did nothing but prescribe a half drachm of Scheele's Prussic Acid in four ounces of water, to be taken by tea spoonsfuls every hour. He laid aside all the gums, narcotics, and the whole list of medicines usually resorted to in such cases. The dose was carried to the extent of ten drops in a day, and in two months she was restored to her health. There remained no symptom of the disease, except diarrhæa, which continued for a long while, and was arrested at last with much difficulty. She has, indeed, not as yet recovered her former fulness of body, and she still remains a good deal enfeebled; but every thing indicates the perfect restoration, in a short time, of her habitual health. *(From Messrs. Duvignau and Parent's paper in the American Recorder, Vol. II. page* 46.*)*

I have, at this moment, four important cases

in hand of decided and confirmed consumption, from constitutional and even hereditary disposition, in the treatment of which I am using the Prussic Acid, alternately, with small bleedings, and the administration of calomel to clear the first passages. The nature of the symptoms in all of these cases, seemed to threaten quick dissolution, when I first saw them, about four and five months since—and the patients still live, nay, think themselves better! Considerable amendment has certainly taken place—this I cannot deny; but I am too fearful of indulging in any hopes which, as far as experience has taught me, cannot be realized. I therefore rest satisfied with the good that has been done hitherto, without expecting the acid to do more.

The testimony of many more highly respectable practitioners might be brought forward in support of all that has been asserted in the present section; but I have already trespassed so much beyond the limits of a work of this

nature, that I shall only venture to quote an extract of a letter from Dr. Webster, of the 31st Regiment of Infantry, quartered at Brighton, which I received, through the kindness of Dr. Gordon of the Army Medical Board.

"From the experience I have had of the Hydro-cyanic Acid, I think it likely to prove highly serviceable in affections of the chest. In one case of *phthisis pulmonalis* it had the effect not only of lessening the cough and expectoration, but also of removing the hectic symptoms which had supervened; and although the disease recurred some time after and proved fatal, yet the decided benefit which was experienced, impressed me with an idea, that in other cases it may produce permanently good effects. I am not so sanguine as to imagine, that where several tubercles have already formed in the lungs, and produced abscesses, the Hydro-cyanic Acid, or any other substance, will have the power of effecting a re-production of the parts; but as dissection has shewn tubercles to

have existed in a chronic state, without occasioning much inconvenience, we may perhaps hope to discover a remedy which shall have the power of inducing this state—and causing small tubercles to assume a chronic form, either by checking their growth, or by lessening the disposition of the surrounding part to inflame and suppurate. From what I have seen of the Prussic Acid, I certainly have reason to hope that it possesses some power in effecting one or other of those purposes."

In subsequent parts of this work, the readers will find occasional communications, accompanied with cases, from other respectable practitioners in the country, on the subject of the Prussic Acid in diseases of the chest. Among them I may mention the names of Deputy Inspector of Hospitals Fraser, Dr. Abel, the author of a learned work on China, Mr. Pitt of Brighton, Mr. West of Greenwich, Mr. Barker of the Civil Hospital at Gibraltar, Mr. Saunders, and others.

C. 3. SUBSEQUENT TO CATARRH, PNEUMONIA, PLEURISY, BRONCHITIS, AND HÆMOPTYSIS.

Each of these complaints may, after their acute stage, terminate in such a morbid state of the lungs, as to re-produce all the symptoms, by which consumption has been characterized. On this subject there is, I believe, no difference of opinion among the profession. Dr. Hastings of Worcester, indeed, in his recent, and I may freely say excellent work on Bronchitis, asserts that "chronic bronchitis resembles sometimes tubercular consumption;"* but that it is, notwithstanding, a very distinct disease. Yet does every symptom enumerated by Dr. Hastings in his description of advanced chronic bronchitis, apply equally to the advanced stage of tubercular consumption of the lungs!† Nay, the very

* Hastings on Inflammation of the Mucous Membranes of the Lungs, page 266.

† Page 279—80. Op. cit.

appearances on dissection, referred to by him, are in no way different from those we are accustomed to see in cases of pulmonary consumption. These are Dr. Hastings' words,— "The diseased appearances (in chronic bronchitis) are not always confined to the mucous membrane; they are also sometimes extended to the substance of the organ. The most common deviation from the natural state, is a certain degree of thickening of the substance of the lungs, from which they become more solid;" and again, "Sometimes tubercles are formed in the structure of the lungs, when their mucous membrane is inflamed. These are generally found in an incipient state; but in some instances they proceed to suppuration. Now and then it happens that the general substance of the lungs becomes solid, and tubercles form at the same time; if this occur, the tubercles in general are not numerous." The fact is, that idiopathic inflammation of any part of the respiratory organs, and the cavity in which

they are contained, may, and will often lead to that morbid state which has been called consumption. When such a state of things obtains, it may be interesting, though not important, to ascertain from which of the above original complaints, consumption has arisen; happily a sufficient number of diagnostic signs occur in each particular case, to distinguish them from one another. In the first place, we have the previous history of the malady, by which we are informed, whether mere symptoms of catarrh, or those by which the other diseases enumerated at the head of this paragraph are distinguished, preceded the present distressing pectoral complaint of the patient. And next we endeavour to establish the required distinction from the diagnostic of each of those complaints, with which the medical attendant is supposed to be acquainted. Thus when pleurisy has preceded, we shall most probably find a fixed pain in some part of the chest, almost superficial, or traced by the pa-

tient down to a very small depth from the surface; such pain being sharp, lancinating, and increased or quickened by inspiration. The cough is dry, and awakens the pain—the expectoration seldom or never streaked with blood. In pneumonia, on the contrary, the pain is deep seated, and obtuse—even when respiration is altogether suspended for an instant, as an experiment, by the patient, the pain does not, as in pleurisy, cease, but continues unchecked and undiminished. There is also, a feeling of great oppression. The cough is less fatiguing, because always moist. Streaks of blood appear in the expectorated matter. Bronchitis, which cannot be mistaken for either of the preceding complaints, but which, as I have already observed, does occasionally terminate in consumption, may, according to Dr. Hastings, be distinguished also from that species of consumption, which has its origin in tubercular formation. The pallidity of the countenance—the absence of pain in the chest, in

the majority of cases—the inferior degree of dyspnœa—the greater volume of air taken into the lungs—the greater quantity of matter expectorated, and this continued for a long period together—the deep and sonorous, instead of the tickling cough—the irregularity of the hectic paroxysms—the partial perspirations—a lesser degree, in fine, of emaciation, are some of the symptoms which denote the disease to arise from advanced bronchitis, and not from tubercular accumulation. The hæmoptysical origin of consumption is too well marked to need any reference to it in this place; Dr. Laennec, in a very ingenious manner, wishes to establish the superiority of a particular instrument which he has invented, and which he calls the *pectoriloque*, as a diagnostic means in all these diseases; and it will be a happy discovery if all he has advanced on this subject should prove true.

From which ever of these complaints the case of consumption to which we may be called

has arisen; if the disease be fully established, we shall find the prevailing symptoms to be those which we have enumerated in the different stages of that complaint, intermingled with those of the malady which has given rise to it, and which serve to denote its particular origin. I shall therefore omit the repetition of them, and proceed to give the following few cases.

CASE XXI. Eliz. Chapman, aged 38 years, registered on the physician accoucheur's books at the Westminster General Dispensary, under the number 29058, applied to me on the 26th of March, 1819, for a violent cough attended with difficult expectoration, which she attributed to a slight cold she had caught in the preceding autumn. She had never suffered any pain, or oppression at the chest. The complaint, from the patient's own account, seemed to have begun with coryza, and other symptoms of catarrh. These were neglected, and no medical assistance was sought for until fever

and emaciation, combined with much previous suffering, alarmed the patient. She had now all the appearances of incipient consumption. There were regular febrile exacerbations in the evening—perspirations in the morning—scanty and difficult expectoration, pulse 110, skin arid and burning, facial flushings, general wasting of the body. She belongs to a healthy family, her husband and children are healthy, and she has herself, till the period of the present complaint, enjoyed perfect health. I find from the notes taken by a pupil of mine, that the Prussic Acid, in the dose of six drops in six ounces of an almond emulsion, was prescribed to be taken by table spoonfuls every two hours. The next visit took place a week after the first, and the cough had almost disappeared. In three weeks, the fever and other hectic symptoms were no longer present, and she appears from the register to have been discharged cured, a week afterwards having returned thanks, as required by the regulations of the Dispensary.

CASE XXII. Miss W——, aged 17 years, caught cold in July, 1819, became gradually thin, lost her colour and appetite, appeared dejected, coughed incessantly, and, altogether, presented a sight of alarm to her parents. Various means were resorted to, in addition to a removal into the country, for the cure of this catarrh, as it was called; but the complaint seemed to bid defiance to all medicine. Late in the month of June last, she was brought to me by her mother, when I learned the above mentioned particulars, and found her even worse than described. Her first appearance produced an unfavourable impression of her case on my mind—and I confess myself greatly the slave of first impressions in medical consultations. She had sandy hair, and a scrofulous look; but I was assured that nothing in the whole circle of her family indicated the pre-existence of any such disease, and that until the present catarrhal affection had occurred, the young lady had never suffered from any complaint.

Miss W——, told me she felt wretched, dejected in spirits, and sure of dying—it came out that she had nursed and received the last breath of a dear friend, who had fallen a victim to decided consumption; and at the recital of this sad story, she burst into tears. Her pulse beat 130, was small—minute—deeply seated. She breathed with difficulty, but suffered from no pain. Fever came on usually after dinner, and kept increasing till bed time. She slept soundly; but woke unrefreshed and bathed in perspiration. The sound of the cough was hoarse, and the paroxysms of it occurred frequently. I administered the Prussic Acid, in mucilage of acacia, every two hours, the good effect of which medicine became quickly visible in the diminution of the cough, the alleviation of the febrile irritation, and in totally checking the morning perspirations. Although amenorrhæa existed, I did not prescribe for it; as I considered it a symptom, which, in case of her improvement continuing and being

permanent, will disappear with the remaining symptoms of the disease.

Thus far as to presumed consumption after catarrh. Come we now to that which follows pneumonia

CASE XXIII. A young gentleman, aged 10, of slight make, and appearing delicate in constitution, was attacked with fever, which at first took on a regular continued form, and afterwards assumed the remittent type in some degree. This disease was very tedious, and the symptoms were remarkably variable. At first, the brain was apparently threatened with mischief; the expression of the countenance was unnatural; the head was painful, and very hot to the touch, and there was occasional delirium. The pulse ranged from 100 to 126; there was great prostration of strength; the tongue was dry and crusted. The head was, after a week, effectually relieved by the treatment employed; and next, the respiration, which hitherto had

been rather oppressed, became very alarmingly quickened, and a cough, which before was only trivial, became constant and urgent. The action of the pulse increased; seven ounces of blood were taken from the arm, which was rather cupped, and just beginning to have the buffy coat. This gave some relief. A blister was applied to the left side, which he sometimes described as being a little painful. In two days after, the inflammatory action of the lungs was again increased, and the breathing was very frequent; but the child was so pale and emaciated, the pulse so weak, and so much debility appeared, that cupping on the chest was preferred to general bleeding, and seven ounces were taken away with manifest advantage. Still the amendment was only of short duration, and now a certain state of hectic arose, but not in so regular a form as in a case before related. There was an occasional sense of coldness, followed by some heat of the skin, and slight flushings of the cheeks; and twice in the twenty-

four hours the perspirations were excessively profuse. We could not procure any expectoration for examination, so little was there of secretion. A second blister was applied, from which no evident benefit was obtained. At this juncture, when the condition of the lungs threatened either to furnish symptoms which would require further depletory treatment, although that would be forbidden by the debility, which was become highly alarming; or to exhaust the little patient by irritative fever, and a rapid circulation, it was resolved to administer the Prussic Acid. It was begun in the total dose, for the twenty-four hours, of four drops, joined with the other ingredients, as formerly described. Auxiliary means of management were used, as spunging the body twice a day with tepid vinegar and water; the blistered surface was dressed for a few days with savine cerate; asses' milk freely taken, and one custard in the day, with a little bread, formed the diet. The temperature of the apartment was carefully re-

gulated. The dose of the acid was gradually increased to eight drops for the twenty-four hours, and it did not once offend the stomach. On the third morning of its use, a sudden faintness and frightful debility, with a complete dilatation of the pupils of the eyes, took place, and made us pause as to the continuance of the medicine: but these symptoms disappearing after three or four hours, we resolved upon a re-employment of our remedy, which already appeared to have acted very decidedly in abating the cough, in causing comfortable sleep, in reducing the pulse, and with these changes, the perspirations were materially lessened. The bowels required an occasional aperient. The urine, both in this, and, as I should have noticed, also in a former case, was distinguished by an extraordinary deposition of mucus. In the case to be hereafter mentioned, it occasionally assumed a puriform appearance, and was once rather bloody. In the youth, blood was passed once, and on several examinations, I found the urine slightly albuminous.

When the medicine had been taken a fortnight, we again lessened the dose, and after a few days more, entirely discontinued it; then using only a light bitter, with an occasional dose of blue pill, rhubarb and sulphate of potash. At this time he is only convalescent, but yet very favourably so, when reference is made to the urgency and tediousness of the acute form of the disease. The lungs have been wholly free from inconvenience for the last fortnight.*

I have ventured to class this case, which was furnished to me by Dr. Scudamore, the attending physician, considering all the circumstances of it, under the present head, from a conviction that hectic fever succeeded the formation of perhaps scanty matter in the substance of the lungs, consequent on inflammation. Mr. Clarke, of Saville Row, attended with Dr. Scudamore; and he has acknowledged to me and

* Since writing the above, I learn that the child is completely and permanently recovered.

several friends, that when the Prussic Acid was proposed, he willingly acceeded to its adoption, although without any personal experience on the subject, from a conviction that there remained no other resource for the young sufferer. He bears testimony to the excellent effects of the medicine in this instance.

Case XXIV. I select, amongst several others, the following case from the report of the practice at the Imperial Clinical Institute of Padua, for the year 1817-18, drawn up and published last year, by Dr. Dall' Oste:—"Il quarto durò un po' di più; ma trattavasi, invece d'una peripneumonia accidentale, d'una di quelle inflammazioncelle polmonari che sogliono costituire le vere tisi floride, o almeno ad esse disporre. Il sogetto n'era una donna anche amenerroica; e di queste inflammazioncelle ne avea sofferto più volte. Era questo adunque il caso per l'acido prussico; ed infatti, dietro l'uso del medesimo, i processi inflammatorj vennero ad

epoche più distanti, e sempre più miti; gli sputi, in prima di molto sospetti, migliorarono assai; e infine, dopo venti giorni di trattamento mancò la febbretta vespertina, e non rimase che un poco di tosse, la quale infine cessò anch' essa; sicché dopo altri dieci giorni, l'inferma uscì anche della convalescenza."

Cases of advanced bronchitis simulating consumption, and of hæmoptysis followed by that disease, have also occurred in my practice, in all of which the Prussic Acid was employed with success; and I would beg leave to call the attention of Dr. Hastings, to the power which I have fully shewn the acid to possess in subduing inflammatory diseases of membranes, as well as of parenchymatous substances. In the enumeration of the means to be used for combating bronchitis, Dr. Hastings has made no allusion to that medicine. The case of phthisis trachealis related by Mr. Thomson of Sloane Street, in the first edition of this work, will find here its appropriate place.

CASE XXV.—Miss G——, aged 40, of a dark but sanguine complexion, a cheerful disposition and irritable temperament, was attacked, upwards of two years ago, with that peculiar affection of the lining membrane of the trachea, which, in its last and ulcerative stage, has not inaptly been denominated Phthisis *trachealis*. She had been treated, during the early period of her disease, on strictly antiphlogistic principles under my superintendance, with the occasional advice of Dr. Baillie; but so little benefit had resulted, that she lost all confidence in medicine, and scarcely any remedies had been employed for the last twelvemonth, except when the symptoms became unusually urgent. The diagnostic characters of the complaint were hard cough, the sensation of dryness of the throat, an occasional dread of suffocation, and inflammation without swelling of the fauces. These symptoms, which were accompanied also with fever and great nervous irritability, never altogether subsided,

although they abated at intervals, which were of some considerable duration in summer. On slight exposures to cold, they always returned with increasing violence; she was therefore confined to the house during the whole of the last and the present winter; and, on my recommendation, as the attacks were gradually becoming more frequent, as well as more severe, she was seriously contemplating the probability of going abroad, in order to try the effects of a temporary residence in a warm climate: this alternative, however, she wished if possible to avoid.

Having the opportunity of very frequently seeing Miss G——, and watching attentively the progress of her complaint, I was led to believe that, although the symptoms depended in a great degree on the inflamed state of the trachea, yet, that much also was to be attributed to the peculiarly irritable state of the nervous system. I was confirmed in this opinion by the state of the pulse, which was small,

quick, and irregular, and varying according to the state of the mind. There was also palpitation of the heart: and the little sleep she obtained was disturbed and imperfect. Under these circumstances, I judged the case to be a proper one for the use of the Prussic Acid, and therefore resolved to try it the first occasion that offered.

On the 26th January, 1819, I visited Miss G——, and found her labouring under one of her attacks. She attributed it to cold, but could form no idea, to use her own language, of the way in which she had caught it, as she had not only not been out of doors, but had for many days refrained from going through the house further than was necessary to pass from her own room to the dining room, which was well warmed before mid-day, the time at which she then left her bed room. The cough was unusually hard, much resembling that of croup, and very frequent; the sensation of suffocation, and, as she expressed it, of something stick-

ing in the windpipe, was extremely distressing; the skin was not hot nor dry; but the pulse was small, quick, and intermitting; and the fauces, on looking into the mouth, were inflamed, and streaked with red lines, as if the larger vessels had been strongly injected: yet, neither the amygdalæ nor the uvula were swelled. On inquiry, I found she had that morning opened her bowels with a dose of castor oil. Such being the state of the case, I told her I wished her to try the effect of a new medicine; and having obtained her promise that the doses should be very regularly taken, the following mixture was prescribed:

℞. Acidi Prussici, min xij.
Aquæ Rosæ, f℥ vi.
Syrupi Papaveris, f℥ iij.

Fiat Mistura, cujus sumatur cochleare amplum unum secunda quâque horâ.

On repeating my visit next day, I found my patient very much relieved; she had passed a more comfortable night than she had experienced for many months, and that morning rose without any cough, or sensation of dryness and

uneasiness in the throat; the pulse was more regular, less quick, and rather fuller.

The use of the medicine was continued for four days, increasing the quantity of the acid in the mixture two drops each day. On the fourth day a slight degree of nausea was experienced; and as the more urgent symptoms of the complaint had altogether disappeared, she was desired to discontinue the medicine. Up to this day, February the 26th, 1819, no relapse has been experienced, and so free has Miss G—— been from any of her former feelings, that she regards the improvement as almost miraculous, and her cure as complete. I am not however so sanguine; and consider the disease as still unsubdued, and requiring a regulated temperature and great caution; although I cannot but anticipate the probability, that the powers of the constitution will be able to restore, in time, the healthy state of the diseased membrane; if the occasional use of the Prussic Acid can keep the morbid irritability sufficiently under controul.

C. 4. OCCURRING DURING PREGNANCY, OR IMMEDIATELY AFTER PARTURITION. ALSO AFTER LONG SUCKLING, OR AT THE PERIOD OF ABLACTATION.

It is not my intention to enter into a detail of all the arguments which have been brought forward to combat the idea of pregnant women being sometimes attacked with phthisis, from some cause originating in the peculiarity of their situation. Neither can I (admitting, as I do, the fact) be expected to point out those causes to which the complaint under such circumstances has been attributed. This would lead me into a discussion wholly inadmissible in a work like the present, where the declared purpose of the author is, to call the attention of his readers to the existence of certain modifications of a disease, in the treatment of which, a particular medicine has been recommended. Any person extensively acquainted with the diseases of pregnant women, particularly as they occur amongst the less fortunate classes of

society, must have been struck with the truth of Dr. Fothergill's observation, namely, that there is a species of consumption attendant on pregnancy, the origin of which cannot fairly be traced to any other source. To this I will add, that I have occasionally observed consumption, the existence of which had never before been suspected, begin immediately after delivery, and go on rapidly and unchecked, without the appearance of any preceding pleurisy, pneumonia, or bronchitis. I shall lay before my readers cases of both these modifications of consumption; in the account of which, the symptoms accompanying the disease will be found detailed to greater advantage, than if they had been enumerated separately, in some preliminary remarks of the author. That consumption will sometimes come on after long suckling, or at the epoch of weaning, are facts, I believe, generally admitted.

CASE XXVI.—Ann Gordon, æt. 37, admitted a patient at the Westminster General Dispensary, on the 3d of February, 1819, pregnant of her eighth child, has enjoyed good health until the last fortnight; when after a very restless night, arising, as she supposed, from the unusually strong and incessant movements of the child, (to such a degree as to produce pain) she became feverish—lost her appetite—and could scarcely stand on her legs, a symptom which, more than any other, alarmed her, as she had been very remarkable for her activity during every other and at the beginning, even, of the present pregnancy. Some days after this attack, the chest appeared to be affected. She breathed with difficulty, though not with pain. She felt considerable oppression on making the smallest exertion, and could not sleep unless her head was raised very high by pillows or other contrivances. At this juncture I was desired to visit her. I found her pale and sunk; greatly agitated and desponding, Her respi-

ration was hurried; and when desired to make a deep inspiration, a violent cough ensued, followed by a dense and glutinous expectoration. The tongue was furred and thick—the eyes had lost much of their brilliancy—the cheeks were sunk—the pulse, 110, small, superficial, and by no means oppressed. Her bowels had been opened by salts repeatedly. Her friends asserted that she had lost much flesh within the last two weeks, and were afraid that she was in a decline. The patient herself pointed to her bosom, which till lately had been remarkably full and tense, and now was wasted in size, and had become flaccid. On pressing with my hands on different parts of the chest, and on the pit of the stomach, no pain was produced; but cough followed. Percussion gave no indication of pectoral disease. There was no headach nor sickness; the movements of the fœtus were lively. The remarkable state of debility in which I found the patient, together with the state of her pulse, precluded me from imme-

diately thinking of bleeding her; but on the cough continuing, after the administration of calomel and other medicines, venesection was employed, though with no evident benefit. The blood shewed no appearance of inflammation. I confess I felt perplexed. The symptoms, however, soon arranged themselves in a more regular form; and the disease, from presenting so many anomalous features, now assumed a decided character, and that character seemed to indicate phthisis. For, independent of the emaciation continuing, and the cough encreasing, together with the expectoration, a regular febrile exacerbation, ending in perspiration, came on at four o'clock in the afternoon, and again, though in a slighter degree, at six in the morning. The pulse ranged between 110 and 130, and the cheeks presented, during the paroxysms of fever, the flushes peculiar to the complaint. The Prussic Acid was now prescribed in the dose of one drop every two hours in water, to be repeated daily; and under

the use of this medicine, the cough subsided, and the respiration became easier. The acid did not, however, appear to influence much the febrile paroxysms, until its use had been extended to three weeks, when these also, as well as every other hectic symptom, gave way, and the patient rallied considerably. The effect on the pulse was striking; for on the acid being taken for eight days it came down to 80, where it remained, except during the attacks of fever. In this improved condition, the patient went on the remaining period of her pregnancy, without, however, gaining much embonpoint; until the 24th of March, when she was safely delivered of a girl, alive, whom she was soon enabled to suckle, without ever having a return of her former complaint.

Case XXVII.—Dr. Macleod, one of the physicians of the Westminster General Dispensary, attended Mary Rosemy, of No. 1, Little Earl Street, in the month of March, 1819,

and at the beginning of the following April, for a complaint of the lungs, which confined the patient to her bed, and which, from every symptom attending it, was considered by him as phthisis. On visiting her one morning, he found, to his no small surprise, that she had the night before been delivered of a female child, in consequence of which he claimed my attendance. I visited the patient with him the same day, and there being no doubt in our mind as to her labouring under consumption, I proposed the use of the Prussic Acid, which being agreed to, was administered for a great length of time, and lastly with complete success. The child she brought into the world partook of the wretched appearance of its mother; being weak, shrivelled, and having scarcely the power to cry. The mother could not suckle it, for her breasts were sore, and had long been flaccid and milkless. It was therefore fed by the hand, but died in a short time after. Previous to her present preg-

nancy, this woman had enjoyed good health; and in this, as in the preceding case, there were no indications of the complaint having originated in pleurisy, pneumonia, or local injury. She was the mother of two other healthy children, and not hereditarily predisposed to the disease All her symptoms were indicative of consumption, both when Dr. Macleod first attended her, and when we visited her together. It will be sufficient to state, that when I was first called to her, she exhibited the most wretched spectacle of emaciation and internal suffering. She was pale, weak, and sunk—she could breathe only with difficulty — coughed incessantly — brought up much purulent matter—and her pulse generally beat 120. In the night she was bathed in cold perspiration. From all these symptoms, as I have before observed, she was wholly freed by the Prussic Acid; and she was discharged completely cured, though not without experiencing several slight relapses,

after having remained nine months on the medical registers of the Dispensary. She has now been in the enjoyment of perfect health for some time, and called upon me in March last, to request my attendance on a friend of hers, and to apprize me of her having changed her residence, which is at present in Whitcombe Street.

I could relate a few more cases of this complaint, likewise taken from the registers of the Westminster General Dispensary, occurring, for the first time, in pregnant women, and terminating, generally, before parturition, under the use of the Prussic Acid: and more particularly the case of Mary M'Swiney, of No. 5, Harvey's Buildings, in whom the complaint had been treated by repeated bleedings to no purpose, and only yielded to successive doses of the acid, without any injurious consequence arising to the child. But the cases I have detailed will be deemed sufficient, I trust, to prove the correctness of what I have advanced, regard-

ing the present modification of the disease in question.

CASE XXVIII.—Mrs. W——, residing in John Street, Fitzroy Square, had enjoyed perfect health during her pregnancy, and was delivered of her first child in April, 1819; when every circumstance promised a speedy recovery. Late in the evening of the fifth day after her confinement, I was desired to see her, in consequence of an acute pain in the abdomen, which had come on while in the act of suckling her infant, and had lasted the whole of the afternoon. On my arrival, she complained of great soreness at the lower part of her stomach, which when pressed upon, became painful, and nausea was excited. The part was not tense, but hotter than natural. The skin was dry and hot—the pulse full, quick, but not hard—the tongue white, slightly furred, dry, rough, and with red edges. Fomentations had been applied without relief, before my arrival.

I ordered bleeding both general and local, as well as other appropriate remedies. On seeing her the following day, a curious change appeared to have taken place in the disease. The abdomen was no longer sore nor painful, even on pressure; it was soft and of the natural temperature: but the chest seemed affected. There was a look of anxiety — quick, short, breathing —difficulty of uttering many words together— fever— head-ach— cough. Yet the chest was wholly free from pain. The pulse continued hard; but the blood taken from the arm the preceding day, exhibited no appearance of inflammation. I ordered phlebotomy once more to fourteen ounces, and antimonials with calomel. Every symptom except the pectoral ones seemed to yield under this treatment. The cough and oppression in breathing continued; indeed, appeared to have somewhat increased. Lastly, the disease soon assumed a hectic character, and was, at the end of the third week after delivery, considered as genuine phthisis.

The Prussic Acid was now administered in small doses with great effect. The patient recovered, gradually, from all the alarming symptoms with which she had been affected; and she was considered out of danger in another month. I should state that her milk gradually diminished during the first week of the complaint, and that she was wholly precluded afterwards from the gratification of nursing her infant.

CASE XXIX.—Mary Buttling, 15, Black Horse Yard, delivered by Mrs. Farrel, was attacked in a similar manner, ten days after her confinement, and declined rapidly, notwithstanding every effort to save her. The Prussic Acid seemed only to lull her into security for a short while, by allaying some of the pressing symptoms of the complaint; but she died two months afterwards. Before this period she had been remarkably healthy.

CASE XXX.—Mary Gillard, of No. 1, Turners' Court, St. Martin's Lane, is another instance of this modification of the disease. It first shewed itself a fortnight after lying-in, without any appearance of ordinary inflammatory complaint. It was suspected at one time, that the hectic symptoms arose from a retained portion of the placenta, the latter having been removed by the midwife, much against my instructions, which directed them to send for me in all cases of retention; but the midwife asserted positively that the whole of it had come away. I tried the Prussic Acid for a short time; but finding that no benefit was produced, I transferred her to the physician of the Dispensary, whose more immediate duty it was to attend her. I understand that the po r woman died sometime afterwards, perfectly consumptive.

I have lately had two cases, Ann Marsden, æt. 28, of Cranbourne Alley, and Jane Bayley, æt. 22, of Drury Lane, in whom long suckling produced all the symptoms of hectic fever and

pulmonic disease. Ablactation was ordered immediately; but seemed not a sufficient measure to stop the progress of the complaint. The Prussic Acid was administered next, when both did well in the course of a fortnight, and were discharged cured. In the case of Ann Marsden, I ought to observe, the symptoms of hectic were preceded by spitting of blood, which was arrested by the medicine; but it returned afterwards, and what is singular, at a time when she had reason to believe herself pregnant. She has, therefore, resumed the acid, and apparently with good effect.

C. 5. FROM A SINGLE ABSCESS OR VOMICA, THE EFFECT OF ACCIDENTAL INFLAMMATION OF THE PULMONIC TEXTURE, OR OF THE MEMBRANES, IN CONSEQUENCE OF LOCAL INJURY.

The expectoration in this variety of the disease, is, at once, decidedly purulent, and is brought up in large quantities. It then ceases to be so, if the lesion of the organ af-

fected take the course of a common ulcer, which it will sometimes do: and then the expectoration becomes thick and glutinous, as if formed by the aggregation of frothy mucous filaments, longitudinally arranged; and pertinaciously adhering to the tongue and palate, as well as to the vessel into which it is ejected. When the purulent expectoration ceases, in this variety, a continual spitting, from increased saliva, succeeds, unattended by any effort or sound. The cough disappears. A repetition of such attacks, or, what amounts to the same thing, a succession of abscesses or vomicæ in the lungs, from the cause here alluded to, which is by no means an unusual occurrence, will perhaps destroy the patient by suffocation; if it does not by consumption. There is in these cases a longer remission from fever than in any other, the patient being sometimes free from it for several days and even weeks.

I have had no opportunities of trying the Prussic Acid in this variety of pulmonic af-

fection, though I have seen some instances of the disease.

Before I conclude what I had to offer on the subject of pulmonic consumption, my readers will, I trust, forgive me, if I say a few words respecting the right discrimination of different sorts of expectoration. In complaints of the lungs, it is of the highest importance to ascertain whether the matter brought up after cough be, or not, real *pus*—a simply *purulent discharge* from an inflamed secreting surface, without solution of continuity—or mere *mucus*, however thickened by evaporation and long sojourning in the bronchia or trachea.

The tests hitherto proposed have either proved fallacious, or limited in the extent of their accuracy. The best seems that which Dr. Young suggested, founded on physical principles; but it has occurred to me, in the course of a rather extensive practice in pulmonic

cases, that another, and, perhaps, a more certain mode of discrimination would be, to consider the chemical constitution of the expectorated fluids. It is well known that mucus —purulent secretion— and pus give out, by combustion, carbonic gas and ammonia. These two products of animal combustion must be larger in proportion to the greater density of the different animal matter burnt in equal volumes. Now the density of pus is greater than that of simple purulent secretion, and that of the latter greater than that of pure mucus. It follows, therefore, that if, by a series of experiments, the absolute quantity of carbonic gas and ammonia given out by an equal quantity of each of the three animal fluids under consideration, be ascertained; a test, both easy and certain, might be obtained, for judging of the nature of each variety of expectoration. This, I have endeavoured to accomplish by a series of experiments on the matter expectorated by several of the patients labouring under

pulmonic complaints, whom I have either attended myself, or respecting whom I have been occasionally consulted; and I hope to be able shortly to lay before the public, the results I have obtained. But as it is very desirable that on this important point, the greatest precision, both as to facts and conclusions, should stamp the character of any communication I may have to make on the subject; I must delay for yet awhile, any positive statement, until I shall be better prepared for it. Thus far, however, I can say, that assuming, from my experiments, the volumes of carbonic gas and ammonia given out, during the process of combustion, by equal volumes of mucus, purulent secretion, and pus, to be different in each; I propose to ascertain to which of these three varieties the expectoration under examination belongs, by burning it in combination with a chemical substance which will give me, as accurately as definite proportions can give, the volume of each of those aeriform fluids.

These being collected during the combustion of the expectorated matter, will inform us whether it be mucus—purulent secretion—or real pus.

In taking leave of the subject of "consumption," I cannot refrain from stating, in a few words, that the degree of value which I attach to the medicine here recommended in the treatment of that complaint, is proportionate to the more or less advanced state of the complaint itself. Thus, if we admit genuine consumption to be susceptible of cure in its incipient stage, then the stubborn evidence of facts (see cases 1, 2, 3, 4, 5, 7, 9, 10, 11, 12,) proves that the Prussic Acid *can* effect such a cure; and further, if to suspend, for some time, the rapid and destructive progress of this malady be deemed a desirable object, and one not pathologically impossible, the same evidence (see cases 6, 8, 16, 17, 18, 19,) will shew the value of that medicine, even in this point of view. That it acts as a palliative where palliatives

only are admissible, the author can venture to state without fear of contradiction; but he will not trust himself in asserting that in theother cases, where the Prussic Acid seems to have completely mastered the disease in its advanced and confirmed stage, (see cases 13, 14, 15, 20,) a *cure* has been effected. For although the recovery, in those cases, continues uninterrupted by the return of any of the former symptoms, and has so continued for *two* and *three* years in most of them; still, to say that the Prussic Acid has effected a *cure,* would probably, under the present prevailing notions respecting that disease, be deemed bold and unwarrantable. This much, however, can be stated, namely, that the patients live and are well, and that thus far the dearest object of the physician has been attained. Nor would I be understood to imply that I consider consumption a disease, which should be combated by means of the Prussic Acid alone. Experience has taught me how fallacious are the expectations of benefit

from a single medicine in the treatment of any disease; and therefore, where the Prussic Acid has failed in its effects, or appeared, from circumstances, inadmissible, I have had recourse, like other medical practitioners, to other and various means of treatment.

The unprejudiced reader will be pleased to consider the above opinion as having been founded on the result of observations made in nearly two hundred cases of what has been called "consumption," in which the acid has been administered with various success by the author himself, or by other practitioners; and that as such it may not be presumptuous to suppose it entitled to, at least, as much consideration, as the opinions of those who, either without any positive experience on the subject, or with the limited evidence of two or three solitary cases, have indiscriminately condemned the use of the Prussic Acid.

SECTION SECOND.

PNEUMONIA, PLEURISY, AND OTHER INFLAMMATORY COMPLAINTS.

When we have used vascular depletion in attacks of acute inflammation of the lungs or pleura, or of the mucous membrane of the air-cells and trachea, besides the other usual remedies adopted in such complaints, we often find that we have neither cured the disease, nor checked the inflammatory tendency of the system; and yet further bleeding seems inadmissible. The last blood drawn is found firmly coagulated, covered with the inflammatory crust—perhaps cupped; but the patient is quite exhausted from the effects of the disease, and the system of depletion employed to relieve it, as well as from many other adventitious circumstances—and the time seems come when the phlebotomist is obliged to pause, though bleeding be still indicated, if he wish not to see the patient expire under the lancet. At such a juncture the Prussic Acid

will be found productive of the most advantageous effects. The pulse is lowered and changed as to character, the cough is relieved, and ultimately stopped altogether, through its influence. The process of morbid secretion in the lungs is suspended. Sleep which had before vanished, and which the physician dared not purchase by opiates, returns; and the respiration, during sleep, is observed gradually to grow calm, soft, and regular. The paroxysms of fever diminish, and soon disappear altogether; and the patient is at last declared to be convalescent. It is during the most alarming stage of many cases of pneumonia and pleurisy, where a moment of indecision, yet of danger, obtains, that the sedative and antiphlogistic powers of the Prussic Acid are most conspicuous, and actually astonish the persons who have, for the first time, witnessed its application.

Some very few writers have denied this property of the Prussic Acid, and particularly the author of a recent publication. But the best answer

to such a negative assertion is the language . facts. With these, now before me, I cannot hesitate a moment in repeating what I have already stated in my first edition, that the Prussic Acid will be found to check slight inflammation, without the concurrence of bleeding; and assist the latter operation in conquering more serious attacks of inflammation. Reports favourable to these conclusions are made from every part of the continent; and in a work of great merit, recently published by Dr. Bellingeri, the following note on the subject of this antiphlogistic, or asthenic, property of the Prussic Acid, merits special consideration. "Memini me adnotasse in Ticinensi nosocomio aquam lauro-cerasi a Clarissimo Professore Borda in morbis inflammatoriis exhibitam manifesto sanguinis crustam phlogisticam præpedire."

CASE XXXI.—A lady, the mother of a large family, robust, and rather plethoric, not particularly liable to catarrh or accidental com-

plaints, was attacked, last spring, with erysipelas, occupying both sides of the face, which after a short interval of complete absence, returned in the left foot. The disease, in neither instance, indicated the necessity of bleeding, and was treated much in the usual manner in which such complaints generally are. Shortly after this period she experienced much anxiety of mind, in consequence of the illness of her husband, and that of almost all her children, several of whom became simultaneously affected with the whooping-cough. Her attendance on all of them was unremitting, and her exertions on those occasions such, that her constitution, naturally strong, began to yield, and seemed to portend some disastrous malady. As soon as the disquietude of mind had in part subsided; she was recommended to spend a few days at Richmond, whence she, however, soon returned with an alarming fever—harsh, hard, and distressing cough—no expectoration—head-ach—the face flushed and swollen—short and op-

pressed respiration—and a feeling of painful tightness deep within and across the chest. In this state I found her when I was first desired to visit her; the pulse beating above 100, hard, heavy, and full. She had, of her own accord, taken a dose of calomel the evening before, with antimonial powder, which seemed to have relieved a few of the symptoms; but the complaint remained unabated. I requested my friend Mr. Keate to bleed her; the blood shewed the inflammatory cotenna, and was cupped. The operation was soon repeated, and the same appearance followed, though not so marked, as before. Other medicines were administered at the same time. A few of the symptoms appeared to give way—the pulse became softer and more developed—the eyes less staring and painful—the tongue, though still furred and red on the edges, was moist—but the fever continued unabated; and there was now a decided pain pervading the lungs, deep seated and increased on the slightest inspiration. A third

bleeding was ordered, and the Prussic Acid in a saline draught prescribed. During the two following days the complaint seemed subdued—that is, there were no symptoms to cause alarm; yet no decided progress towards recovery. This circumstance led me to mention to Mr. Keate that I dreaded a renewal of the inflammation: of this we became certain on the following day. Four more cups of blood were, therefore, taken from the arm, and on this occasion, the last portion of the blood drawn was almost wholly free from every sign of inflammation. Calomel in large doses had been administered throughout—and in addition to the Prussic Acid, powders consisting of tartarized antimony, nitrate, and supertartrate, of potash were given in rapid succession. The fever abated considerably. The pulse became softer. The pain in the chest was not so troublesome, and much less so after the application of a blister on that region. The cough lessened materially from the moment of her taking the acid;

but appeared to diminish still more after the application of the vesicatory. The patient was not so much exhausted as one might be led to suppose after such severe discipline, but presented a spectacle of great distress from the still pervading difficulty of breathing. On the morning of the ninth day, I thought I perceived, from many unequivocal signs, a threatening of a return of the inflammation. This gave me great uneasiness, for the case occurred in a family to which I feel an almost filial attachment. I expressed my anxiety to the attending surgeon, and proposed calling in further advice, which, with the consent of the family, was obtained on the following morning. The patient had passed the preceding night in tolerable composure, and seemed better on the arrival of Dr. Baillie, who cheered both the patient and the physician with his favorable professional opinion, and those friendly manners so peculiar to him, which render his advice even more valuable. The digitalis was prescribed and taken in an

appropriate vehicle in doses of eight drops every three hours. The patient began to feel *uncomfortable* after taking the first dose—she became restless soon after the third—low—agitated—moving her head alternately, and in quick succession to each end of the pillow. Large drops of sweat appeared on her brows; she felt nausea, and great oppression after taking the fourth draught; and by the time she had taken forty drops of the tincture, her sufferings had increased to such a degree, that she declined the remaining quantity—nor could I well combat her resolution under so many circumstances of distress. These indeed, had so much increased by night, that about two o'clock of the following morning I was summoned to her, and found her vomiting, unable to speak, bathed in a cold and copious perspiration, pale, with her eyes glassy and fixed, the pulse quick and wiry, and, in short, with her whole appearance calculated to excite the most lively apprehensions. My first step was to administer saline

draughts, with a spirituous tincture and camphor. These checked the vomiting, and improved the tenor of the pulse. In about an hour afterwards, she fell into a sort of doze, from which she awoke next morning somewhat more cheerful, although still labouring under great oppression at the chest, and with a pulse again indicative of unsubdued inflammation. With her consent, I now prescribed the following mixture:—

℞ Potassæ carbonatis gr. xxx.
Cocci cacti gr. viii.
Aquæ stillatæ f℥ vi.

Terantur optime, et solutioni, per chartam bibulam diligenter colatæ, addantur,

Acidi Hydrocyanici m. viii.
Syrupi papaveris f℥ ii.

F. M. L. A. cujus cochlearia iii. media, cum succi limonis recentioris f℥ ss opportuné edulcorati, in impetu effervescentiæ, tertiis horis hauriantur.

This was continued regularly night and day for three days, during which time, the amelio-

ration of every symptom of inflammation and pectoral disease which took place, led to the ultimate recovery of the patient. The convalescence was comparatively short, and there is every reason to believe that it will prove a permanent one.

CASE XXXII.—A boy* aged 14, had suffered for four weeks with fever, supposed of a typhoid kind. At last a pain in the right side of the chest seized him violently, and affected his breathing—leeches with blisters and smart purging seemed to remove it. In two days the chest became again the seat of disease, and a cough manifested itself of the worst kind. General bleeding with blisters, and the other usual means were had recourse to; but without

* This case, with another, has been kindly sent to me by Mr. Sanders, a gentleman of very extensive practice and long experience in Cheshunt. He has prefaced them with the following few but appropriate words. "My dear Sir, not supposing the following cases likely to come under any other eye than my own, I cannot give you a very particular detail of them; but what I send, you may depend upon as correct."

much effect; for at one time the boy coughed till he was supposed *dead*, and I was sent for in consequence. I found him so weak as to render bleeding again hazardous. One minim of the Prussic Acid was directed to be taken every hour for six hours, then every two, and so on as circumstances offered. In three days the cough was gone, and the boy got perfectly well.

I must now beg leave to quote part of a medical report from Mr. Barker of the Civil Hospital at Gibraltar, to the Medical Board in London, by whose kind permission I am enabled to give it publicity.

CASE XXXIII.—"An opportunity occurred of making use of the Hydro-cyanic Acid in the manner pointed out by Dr. Granville, in a case of pneumonia, where blood-letting had been resorted to in the first instance, without appearing to have subdued the disease. *The result was most singularly successful.* Great

dyspnœa and harrassing cough were speedily removed, and the patient rapidly regained his strength".*

Another inflammatory disease of great danger, in which a trial has been made of the Prussic Acid with success, is the *Angina Trachealis* or Croup. Besides the cases mentioned by M. Rudland, in his letter to me, quoted at page 196, Mr. Sanders of Cheshunt has furnished me with a striking instance of this dreadful malady, successfully combated with the acid. But before I proceed to relate the case itself, it will not, perhaps, be deemed impertinent to the object of the present work, to recall the attention of my readers, particularly of those who are not of the medical profession, to the essential characters of the disease.

* In another part of the same report we find the two following sentences. "The acid was used in advanced phthisis in two instances, but was not pushed to any extent." "In two cases of pertussis (whooping-cough) it was found beneficial."

A child, generally under the age of seven or eight years, in the apparent enjoyment of strong health, ruddy and robust, (for such are the children who are most subject to the complaint) at the close of a wet and cold day, will perhaps appear, all at once, drowsy and fretful—his eyes suffused and heavy. While the parents, uneasy at the appearance of such symptoms, debate among themselves on their probable cause; the child is heard suddenly to breathe with a sibilant noise, and quickly to cough with a sound, frightful to the hearers, which has been compared to the *hoarse crowing* of a cock. At every successive hour, the respiration is found to become more difficult, and the cough shrill and troublesome. The little patient's whole frame seems agitated during every effort made to expectorate. The face swelled and flushed, with the globe of the eyes starting outwardly, present a spectacle of anguish and great inward suffering. The frightful idea of instant suffocation darts across the mind of the beholder—he pro-

ceeds to loosen every fastening, every article of clothing—but relief does not follow. The child throws his head backward, and opens his mouth wide to catch every passing breath! The pulse is quick and full, sometimes intermitting and irregular—a degree of heat pervades the whole body, and great febrile action becomes apparent in every symptom. In some instances, the termination of this insidious disorder is as rapidly fatal as its attack is occasionally sudden. But in most cases, life is protracted to the third or fourth day, when it becomes extinct. Where a child recovers from one attack, he runs the chance of another, or of many. I have known a child lay down to rest in perfect health, the pride and love of his fond mother—from whom he had snatched a parting embrace, in high spirits, at the approach of evening—wake suddenly at midnight, with a harsh stridulous cough, struggle for air, and in ten hours die of suffocation!

CASE XXXIV.—Mr. Sanders's case is addressed to me thus: "W. Clark, aged 10 years, was seized with croup. The usual means, such as bleeding, leeches, emetics, digitalis, &c. were employed with every other medicine that could be thought of. The boy was relieved a little, for the time, by their use, and seemed to get over the attack; but at the end of ten days he appeared so weak, the breathing had become so hard and difficult, and a fresh attack of croup so manifest, that I was induced to give him one drop of the acid every two hours. He took in three days 24 drops, and I assure you that by the use of this acid, in four days, he was perfectly cured of all the symptoms of the disease. Now, Sir, as it can be of no moment to me, beyond the comfort of giving my patient relief, I can have no motive for relating the case, but what I think due to yourself, in the first place, and to us all generally."

Nor are those of the pneumatic organs the

only cases of inflammation in which great benefit has been derived from the use of the acid. I repeat it, that in every sthenic disorder, which previous bleeding has not subdued or but partially conquered, the Hydro-cyanic Acid will be found of the most essential service. I shall proceed to detail a case of diaphragmitis, and another of uterine inflammation, in both of which the most alarming symptoms were quickly subdued by that medicine.

CASE XXXV.—A servant of Sir Henry Peyton, Bart. was suddenly attacked with an acute and excruciating pain in the back, about the insertion of the diaphragm, accompanied by frequent vomiting, anxious looks, flushed face, hard and quick pulse, and a difficult short-broken respiration. The apothecary who usually attends the family, bled him copiously, and employed every other means which experience and accurate knowledge, in such cases, suggest; but the complaint seemed to baffle every

remedy, and the poor man was quickly reduced to his last extremity. My attendance was then deemed necessary, and I was hastily summoned to see the patient at one o'clock on the morning of the 24th of June, 1819.

I found on my arrival that several of his fellow servants had surrounded his bed in expectation of seeing him expire. He laid motionless and pale—his haggard looks and face bathed in cold sweat announced much danger. The pulse was small and hurried. The pain in the back continued, and had extended all round the body like a zone, being increased on pressure. The kidneys seemed likewise to partake of the morbid action of the neighbouring muscle. No urine had been passed for several hours. I immediately precribed a mixture with the Prussic Acid, of which he was desired to take two drops every two hours, and I left him with little expectation of his surviving. On the following morning I found that the stomach had not rejected the mixture—

that some urine had come away—that the pain had become easier, and that the patient had slept for two hours. The temperature of the skin was more natural and the pulse stronger and not so quick. So unexpected a change led me to urge the repetition of the medicine, which was readily agreed to; and by its use, in less than a week, the patient was, not only out of danger, but out of bed. Considerable weakness remained behind; but I had not an opportunity to see the patient until one month afterwards, and he then stated that he completely recovered, on that occasion, in the course of a few weeks, and had continued in the enjoyment of perfect health ever since. I could then for the first time distinguish that he was a stout, robust looking man—just a fit subject for inflammation to play upon.

Metritis, or inflammation of the womb, is happily a disease not of frequent occurrence; but when present, it is calculated to excite the

most lively apprehensions, and cannot, often, be subdued by the ordinary means of depletion.

A case of this kind occurred to me in June last, in which, although bleeding and the warm bath were employed, the ultimate recovery was certainly due to the Hydro-cyanic Acid.

CASE XXXVI.—A married lady who had been subject, the previous winter, to several attacks of inflammation; such as sore-throat, erysipelas, &c. was suddenly seized, while in the apparent enjoyment of health, with a most excruciating pain in the region of the womb, shooting across it and downwards, towards the tuberosity of the ischia, and obliquely forward to the groin, particularly of the right side. The pain was of that nature as to bend the body double, and to cause the patient, otherwise a person of the greatest fortitude and resignation, to scream aloud. I arrived in less han ten minutes after the first attack, and could not, until after a few questions and some external

examination, comprehend the nature of the disease. My first impulse was to order an anodyne mixture and a warm bath, both of which were procured with celerity; but the pulse, which on my arrival was *scarcely perceptible*, had, in less than five minutes, assumed a beat of such extraordinary strength and fulness, that without a moment's hesitation, I took out a lancet from my pocket, and without much preparation, plunged it into a vein of her right arm. A garter served for a ligature, and a folded piece of blotting paper for a compress when the operation was finished. The family were on the very act of leaving town, when the accident happened, and all the servants had already left it. The bleeding produced instantaneous relief. The anodyne quieted the pain in some degree, and the warm bath soothed the great irritation of the affected organ. Towards evening the patient considered herself better; but the pain was not gone, and the uterine region felt excessively uneasy. A natural motion occurred, and urine

was passed as usual—no complaint seemed to affect either of the viscera destined for those excretions. I administered a purgative draught, notwithstanding, and as I knew the patient to be weak from previous illness, and of a disposition not easily to recover from great loss of blood, I provided against the effects of any remaining inflammation, by giving her the Hydro-cyanic Acid in small doses, every two hours, and in saline draughts. This medicine was continued for three days, at the end of which the lady had quite recovered from the disease, though not quite from its weakening effects.

Mr. Plattner has stated in an Italian review of the former edition of this work, that he cured an acute inflammation of the womb, by giving the Prussic Acid in doses of 32 drops every two hours. Of course the acid must have been considerably diluted.

In a work of Dr. Dall' Oste, already quoted, it is stated that a case of *Metritis* with suppressed menstruation, which had occurred in a patient who had some years before been cured of a similar complaint, with induration of the womb, by Professor Brera, by means of the Prussic Acid—was again effectually removed by this same medicine, thrown up in the form of injection, with the addition of leeches to the anus, and the use of purgatives. Another instance of this same inflammatory disease having occurred sometime afterwards, Dr. Dall' Oste soon restored the patient to her former state of health by means of the same treatment.

In the Transactions of the Medico-Chirurgical Society of Berlin for 1816, there are four cases of acute hydrocephalus in children attended by the most marked symptoms of inflammation, three of which were cured by repeated doses of laurel-water. The fourth terminated in a general anasarca.

SECTION THIRD.

CATARRH—SPASMODIC COUGH.

No complaint presents itself oftener to the attention of the medical profession in this country, than what is simply called a cough, or a cold, without any specific or determined disease besides. Almost every body suffers from cough or cold at some time or other; especially during the winter, and, indeed, either or both are so generally prevalent, at some particular periods of that season, as to become a common topic of conversation when two friends meet, or a patient is visited by a physician. An indisposition in itself so slight, may not, in the opinion of many, require, or deserve, any medical treatment; but when it is considered that a simple cough, if long suffered to exist unchecked by any remedy, will become a most harassing companion to the patient, and often assume a more serious aspect, it will readily be granted that any means, better adapted than

those hitherto employed, to stop it in its incipient state, should be hailed as a real benefit.

Such a means, I feel no hesitation in asserting, is to be found in the use of the Prussic Acid, properly applied to the different species of the complaint to be cured; such as the catarrhal, the dry and the spasmodic cough, the stomach cough, the nervous cough, &c. On this subject, Mr. Thomson of Sloane Street, has made the following report which was inserted in my first edition.

" In catarrhal affections, my experience of the success of the Prussic Acid has been considerable, owing to the prevalence of an epidemic of that character at present in this neighbourhood. The complaint makes its attack with rigors, followed by febrile excitement, sneezing, hoarseness, and dry, hard cough coming on in paroxysms, which increase in frequency at night, and prevent sleep. The tongue is furred, the bowels are confined, and the expectoration extremely difficult. In very

few of these cases have I had occasion to use the lancet, since I employed the Prussic Acid, although the state of the pulse in many of them would have fairly authorized it, had I not known the powerful influence of that medicine over the circulating system. My general practice has been, after purging, to commence the use of the Acid, largely diluted with distilled water or simple almond emulsion, in doses proportionate to the age and strength of the patient, increasing the quantity two or three minims, on the whole portion taken in twenty-four hours, each day, until the cough be subdued. In adult cases, the dose I have given at first has been two minims, in a table spoonful of the vehicle, repeated every second or third hour during the day; while, the following formula has been prescribed for infants between four months and a year old."

℞ Acidi Prussici, min. ij.
Aquæ Distillatæ, f3jx.
Syr. Tolutani, f3j. Ft. Mistura, cochl. min. ij. 3^tiis horis sumenda.

"The greatest amount to which I have ever carried the acid, has been twenty-four minims in the day to an adult, and six minims to an infant."

"In these catarrhal affections, the first obvious effect of the acid is the procuring sleep at night, and the lengthening the intervals of the paroxysms of coughing. On the following day the pulse is found less frequent and softer; and, by degrees, the violence of the paroxysm of coughing is much abated. I have not remarked that it promotes expectoration, but it decidedly renders the cough softer, and less distressing, without it; while the bowels are in general gently affected, so that, except in very few instances, I have seen no necessity for repeating the purgative. In debilitated and old patients, the languor which sometimes follows the use of the acid is very considerable, but it is easily removed by small doses of stimulants; and, when the cough is sufficiently subdued, by the ammoniated tincture of iron, exhibited in brandy and water."

"I send you the detail of one case only of the catarrhal epidemic, to which I have alluded, the practice being very nearly the same in all;* but I have subjoined a few other cases, to shew its effects in some other complaints, which have generally been regarded of very difficult management."

CASE XXXVII.—"Mr. S——, a gentleman attached to the Board of Controul, about thirty-seven years of age, of a plethoric habit and high florid complexion, applied to me, on account of a severe cough, (the epidemic catarrh above mentioned,) under which he had been laboring for some weeks. For several nights he had obtained scarcely any sleep, owing to the increased frequency of the paroxysms of coughing, which had also produced consider-

* "I have prescribed it in twenty cases of this epidemic catarrh. In children, however, who have been very severely attacked, I have found bleeding and brisk purging to be necessary previous to the use of the acid." T.

able soreness of the fauces. There was no pain in the chest, but he was extremely hoarse; and the breathing was rather short, and attended with wheezing. He had been taking gruel, honey, paregoric, and several other domestic remedies, without any benefit.

"After opening the bowels, he commenced the use of the Prussic Acid in doses of two minims, in twelve fluid drachms of water, repeated every second hour. The first night after taking the acid, he had some comfortable rest, the cough abated both in frequency and violence, the expectoration became more easy, the pulse softer and more steady, and in three days all the symptoms subsided."

"In this case the patient did not confine himself to his house, nor alter the nature of his diet. He took no wine, because he had properly discontinued it, as well as the use of all fermented liquors, from the commencement of the complaint."

The following case is selected from some others that have occurred in my private practice.

CASE XXXVIII.—Miss H——, healthy and strong, was occasionally affected by colds, which, after two or three days, were attended by cough, with little expectoration. On taking precautionary measures, Miss H—— was sure of soon freeing herself from her catarrh, but not so with regard to the cough, a symptom which continued to distress her for many weeks. To prevent this, she had recourse to every sort of medicine which experience usually suggests, as most likely to be successful. The benefit, however, which she derived from them, was trivial and uncertain: the emulsions, the expectorants, the soothing draughts, the oxymels, and various preparations of ipecacuanha, were all tried without permanent success. Having witnessed the good effects of the Prussic Acid in a case of sympathetic cough, under my care, she, of her own accord, proposed to me the taking of that medicine for her

troublesome complaint, to which I readily assented. I prescribed the acid, in an appropriate vehicle, in such doses that from five to eight drops were taken in thirty hours. Its use was not required beyond a week; for, at the end of that time, the cough gradually diminished, and ultimately disappeared; nor has it returned since.

I have had numerous opportunities, at the Westminster General Dispensary, of exhibiting this medicine in similar cases of cough, some of which were of a bad character; and I have succeeded in all of them, to the utmost completion of the patient's, and my own wishes. I shall relate only the following.

CASE XXXIX.—Sarah Roberts, living in Great Earle Street, is pregnant of her eighth child, and about five months gone. From the moment of her quickening, a most harassing cough, of the spasmodic kind, came on, for

which she desired my advice. She seemed to me to be so much distressed by this symptom, as I considered it, of nervous irritability, brought on by the peculiar nature of her situation, that after the usual verbal assurances that the complaint was, in fact, no complaint at all —that it was owing entirely to her being in the family-way, and that she would get well as soon as confined (all which assurances had neither the effect of calming her mind nor quieting her cough;) I determined upon cautiously administering the Prussic Acid to relieve her. I began with very few drops, and watched its effect. The mixture in which I gave it produced the happiest results, and on my seeing her again some time afterwards, she expressed herself quite free from cough, and in excellent health. No bad consequence could result, and none therefore occurred, with regard to the particular situation in which she was placed.

The success I met with in this case encouraged me to employ this medicine in several other instances of severe and harassing cough attending pregnancy, with decided benefit. I may mention the case of Jemima Wernam, a patient of the Westminster General Dispensary, whose distressing and spasmodic cough was such as to threaten abortion at every attack. She was relieved from this troublesome symptom by the Prussic Acid, and was delivered at her full time without any accident.

The next cases to which I shall allude are those of my own children, who in the winter of 1818, were attacked by a cough of an alarming kind; and so incessant, hard, and distressing, as to lead a particular friend of mine who happened to hear one of them cough, to believe that he was labouring under the whooping cough. The eldest, a girl, was the first who shewed any symptoms of this complaint. She had been out in the evening, and

returned home with a bad cold, followed by cough, particularly at night. Two days afterwards, while pursuing the usual mode of treatment with her, I had the regret to find that the third, a stout healthy boy, was similarly affected. By the evening of the next day the second was also attacked in the same manner; and a fourth, yet at the breast, was not long in shewing similar symptoms of the complaint. I should have called this a species of influenza; but that the only symptom of importance remaining behind, after curing the catarrh, was the cough. This, indeed, was most violent, disturbed their rest at night, and rendered them very uncomfortable by day. Sometimes the violence of the cough was such as to bring on vomiting, tears flowed from the eyes, the face became flushed with blood, and they complained of pain in the head. There was nothing wanted to constitute their complaint, as real whooping-cough, but that peculiar catching and stridulous inspiration, which so eminently cha-

terises a paroxysm of the latter disease. There was, however, no fever present, except, perhaps, at night, when they had been kept awake by continual coughing, for some hours. I am very fond of giving nature a fair trial in complaints of children, and therefore I did but little to relieve them for a few days, particularly as there was nothing alarming in their indisposition. When, however, I found, that the cough, instead of diminishing, increased, and that the tendency of the blood to the head, during the numerous paroxysms of it, was likely to produce mischief, I resolved to endeavour to put a stop to the complaint. My perfect reliance on the properties of the Prussic, or medicinal Hydro-cyanic Acid, in cases of this kind, induced me, of course, to try it in this instance; and I soon had reason to be delighted at the good effect it produced. In about a week, from their commencing its use, the cough had entirely disappeared, and they have kept wholly free from it ever since.

Within the last eighteen months my experience of this medicine in cases of cough, such as the one just described, attacking young children, has been pretty extensive; and I can with confidence assure both the parents of such invalids, and the practitioners attending them, that they will find in the use of the medicine I propose against it, the realization of their most sanguine expectations. The use of this medicine in children is wholly free from danger, when properly and cautiously administered.

The following is another case taken from the practice of Mr. A. T. Thomson.

CASE XL.—"Lieut. Colonel F—— had been afflicted every winter, for several years past, with a spasmodic cough, which had resisted every means that had been tried for its relief; and therefore this season he allowed it to take its course, having recourse to a little paregoric only occasionally at bed time. As I was lately,

however, in attendance upon his family, his wife persuaded him to allow me to prescribe for him; and conceiving it to be a case likely to benefited by the Prussic Acid, it was given to him in doses of two minims in a fluid ounce of almond mixture, and repeated every two hours. After having taken it for three days, and when the dose was increased to four minims, his cough abated in frequency and violence, he obtained sleep, and otherwise experienced such decided benefit, that, as he was about to return to his regiment in Ireland, I was requested to give him the prescription. This of course was useless, as the acid is not yet an article of the materia medica of any of the British Pharmacopœias; but a small phial was given to him, with directions how to use it; under the requisite cautions."

CASE XLI. In the American Medical Recorder I find the following instance of spasmodic cough treated with the Prussic Acid. "In

1817, a woman, aged 60 years, was admitted into one of the wards of the Hotel Dieu, under the care of M. Husson. She had during her whole life, almost, suffered from difficult respiration; and of late years had been much tormented with a sort of harassing dry cough, which deprived her of rest both by day and night, and which had reduced her to a mere skeleton. She excited pity in all who saw her; and prevented, by her continual coughing, all the sick in the ward she was in, from sleeping. M. Husson availed himself of this opportunity of trying the Prussic Acid; he ordered her to take a few drops of it, mixed with a gummy solution, and augmented the dose gradually. From the first day, the cough diminished; and though it was never completely arrested, it was so far diminished that the patient considered herself cured."

Mr. Rudland reports that in a case of *tussis*

senilis, known to be of a spasmodic nature, the acid was administered with decided success.

Mr. Pitt of Brighton, in a letter to me, dated the 18th of June, in addition to other cases of disease, successfully treated with the Prussic Acid, which will be found in the sequel of this work, gives me the following summary account of a spasmodic cough cured by that medicine. "Complete success has attended the use of the medicine you have recommended, in a case of spasmodic cough, in a child belonging to Mrs. Gray, No. 4, North Parade. The usual remedies had been previously tried without effect."

Even the authority of the writer of a recent pamphlet on the use of the Prussic Acid in stomach complaints, may be quoted in support of this part of my practice. That author states, that "in *simple dry cough*, without pain of the chest, constant dyspnœa, or fever, whether in children or adults, the Hydro-cyanic Acid appears to him an admirable medicine, deserving all the commendations which it has received."

SECTION FOURTH.

HECTIC—AND SYMPATHETIC COUGH.

Under this denomination I mean to include two of the most harassing symptoms attendant on organic derangement, irregularity of animal functions, or unnatural accumulation of fluids within any of the cavities of the body. These symptoms are at times so distressing, that any sort of relief is welcome—nor am I to be told, that to combat a symptom with a view to allay it, while the complaint which has given rise to it continues unabated, is absurd. The fact that such symptoms may be relieved is undeniable—and have we not, indeed, a daily proof of it in the *successful* administration of anodynes and sedatives of all sorts, in cases of acute pain, from wounds or other injuries of the system, while these remain yet uncontrolled by the power of medicine?

The following cases speak whole volumes on

this subject, if I may use the expression; and by those who are fully sensible of the value of a medicine which can arrest the violence of a symptom, without interfering with our endeavour to effect a complete cure with other remedies at the same time, as has been often the case with opium or hemlock, the acquisition of the Hydro-cyanic acid will be duly appreciated.

CASE XLII.—Mrs. Upton consulted me in the spring of 1819, in consequence of a harassing and incessant cough, under which she had suffered for some years. The attacks followed each other rapidly; but on the approach of winter, or after much exertion, or ascending the stairs, the paroxysms became even more severe. Her night rest was not unusually disturbed by them; and she generally coughed for upwards of an hour, on rising from bed, every morning. When I first saw her, she laboured under considerable dyspnœa—spoke with some difficulty, and not without checking herself at

intervals, to breathe more freely—was much emaciated—sallow—and feverish. Her pulse was irregular and intermitting—her head ached violently, particularly over the eyes, which were deeply tinged with yellow. The tongue was furred—the breath offensive—the region of the liver prominent, and exquisitely sore to the touch. The bowels never acted without the use of opening medicines—the urine was generally turbid and sedimentitious, except when the patient was agitated or highly nervous, at which time it was clear and almost colourless. In other respects she was regular. It appeared to me evident that the case was one of hepatic congestion; and that the fever, as well as the cough, was simply sympathetic. Under this impression, I entered upon an appropriate plan of treatment for the disease, and rested my hope of the removal of the cough on the cure of the former. Although the primary complaint began soon after to give away, and at the end of a fortnight considerable amelioration

had taken place, the cough continued *unabated*. This led me to employ the Prussic Acid, in conjunction with the other remedies she was taking, and the effect it produced on the cough, was almost as instantaneous as it was beneficial. In about a week this symptom had wholly vanished, and although her complete recovery from the hepatic disorders took up a longer period of time, the cough never returned. Mrs. Upton has been in the constant enjoyment of health ever since.

CASE XLIII.—The Lady of Major Fitzgerald, of the Military College at Farnham, wrote to me in April 1819, in the following terms.

"I am not now addressing you on my own account; but on that of my nurse, for whom I have a great regard. I have been reading your tract on the Prussic Acid, and one of the cases is so similar to the state of health she is in, that, with your leave, I should like to try it."

"She has been afflicted with spasmodic asthma all her life, and whenever she catches cold, has a violent access of it; attended with sharp pain through her shoulders—pain in the side—heats and flushing, and every symptom attending *bilious* suffering also, and which have encreased since her residence in Farnham. In the middle of summer, her breathing is difficult, and the least agitation produces an almost suspension. Her spirits are very good, but her pulse vary, as the apothecary tells me. He one day wished to bleed her; but was willing to try the effect of a strong aperient, and a blister on the chest. Both did their duty; but no relief, materially, ensued; and the day following the pulse were in that state, as he said, it would have been injurious to bleed her: which however on the third day he did, from a return of the original necessity for it."

"There was no indication of inflammation visible in the blood; but it relieved her very much, and the attack *subsided*. This damp

weather affects her, and though she is able to do her work, still she is never out of pain.* She is about 30 years old, and very healthy in all other respects."

Instead of an asthma, I was disposed to look upon this woman's case as one of stomach and liver complaint, and the cough as the result of sympathy between those organs and the lungs. My advice therefore was to attack the real disease by suitable means, and the cough at the same time with the Hydro-cyanic Acid. To this recommendation I received the following answer on the second of June.

" We were unable to follow your prescriptions until within the last twenty-four hours (as I sent to London for the ingredients that they might be good) she took the prussic mixture in the twenty-four hours, beginning at noon yesterday. At night she took the powder, and the emetic this morning; passed an indifferent

* "In her chest, side, and shoulders; with pricking burning in her stomach, as she expresses it."

night, great shooting pains in the back and stomach, and coughed rather more than usual. The emetic acted wonderfully. She was sick nine times, and brought off each time nothing but bile and phlegm: this seems to confirm your view of the nature of her disorder, and has given her great hopes of ultimate cure. Of course, she feels very languid and drowsy; but this I believe belongs to the Prussic Acid."

In reply to this communication, I urged the continuation of the same medicines, and particularly the repetition of the Prussic Acid, of which I desired eight drops to be taken in the day in a suitable mixture. The result of such a treatment has been, that the "patient recovered her natural health in the short space of *a week;* and got rid of her cough and *spasmodic* asthma, in the short space of *four* days." Such were the expressions of her mistress to a friend, at the time; and such were those she used at a subsequent period, when I had the pleasure of a personal interview with her.

CASE XLIV.—While in attendance, last winter, on one of the children of the Earl of Pembroke that was slightly incommoded; my advice was desired respecting a young female servant, who, for some time, had been afflicted with a singular sort of cough, and was, otherwise, much indisposed. On inquiry, I found that this young woman had suffered for some time from a suppression of the menses, in consequence of getting her feet wet; and that an inflammation of the chest had been the result. For this she had been properly bled by Mr. Walker of St. James's Street, and appeared to get well of that attack; but soon relapsed and became worse. My notes supply me with the following memoranda of her history, from the period when she came under my care. Jane Roberts, a short, stout-made, girl from the country, aged 20 years, with dark hair and eyes, is afflicted with an almost incessant cough, which, at first, seems easy, but which, at the close of each paroxysm, becomes highly distressing. During

the attack, a curious undulatory motion is perceived in the whole range of the trachea, proceeding from the angular hollow of the sternum upwards towards the glottis, attended by a singular noise, distinct from that of the cough. An immediate effort at swallowing next takes place, as if to counteract this motion; when a sound, louder than what accompanies the act of *gulping*, is produced. The patient states, that on those occasions she actually feels something very thick, rising in her throat, producing a sense of suffocation. The sound of the cough is somewhat like that in croup; but were I to attempt a description of the whole phenomenon, I should compare it to a strong current of air forced, at short intervals, through an elastic tube endowed with many thick valves, which being fastened by one half of their circumference, and loose at the other, present to the air a simultaneous resistance, and a free passage. Or in other words, what is perhaps nearer to the reality of the case—it seems as if the air,

during expiration, while the patient is coughing, experienced some resistance at each cartilaginous semi-ring of the wind pipe, dilating as it passed, and thus producing the external phenomenon noticed above. Be this as it may, I ascertained that the poor girl was suffering from inflammation of the chest, perhaps owing to a translation of fluids; I therefore ordered her to be bled, to have her feet put into warm water frequently, to be purged, blistered, and to take cooling antisthenic powders, Mr. Walker on finding the blood inflamed, very properly repeated the bleeding, and the patient again recovered from this attack. But, every month, about the time when the menses should have appeared, there was a repetition of the symptoms, requiring a repetition of the means of cure. The cough alone seemed to remain the same throughout; whether inflammation were present or not. It now occurred to me, that the liver was perhaps as much in fault as the chest, and I therefore desired

her to stretch herself on a sofa, when on examining the region of that viscus, I found it painful to the touch, and reproducing at each pressure, particularly near to the diaphragm, a fit of cough attended by the same croupy noise —the exhibition of the same curious phenomenon in the trachea before described—and the involuntary gulping which constantly followed it. I satisfied myself of all this by repeating the same experiment (pressure on the liver) in the presence of the head nurse, and two of her fellow servants. My opinion, which had hitherto been cautiously given, was now fully formed and openly spoken. Large doses of calomel and jalap were administered, and a mixture of camphor with twelve drops of the Hydro-cyanic Acid, given in doses of two spoonsful every three hours. The complaint yielded gradually to this treatment, and the cough disappeared almost immediately. In August the menses returned, and she was sent quite well into the country, as a place where

she would be less likely to suffer from any relapse. At the moment of writing this (18th of September) I am informed, that the girl entered into the service of Dr. Fowler of Salisbury, soon after; and that of late a slight cough had again made its appearance. How far this may be the same sort of cough, and the effect of sympathy from some other complaint, I have no means of knowing.

CASE XLV.—Charlotte Pearce applied to the Westminster General Dispensary for relief from an incessant and very distressing cough, with which she had been affected for upwards of two years. She had been ill for some time with a chronic liver complaint; and by a careful external examination, this organ appeared, in fact, to be in a diseased state, and adhering partially to the side. After having suffered from a violent cough during more than a year, occasional symptoms of hectic fever, with two daily exacerbations,

came on, attended with flushings and perspirations at night. On getting rather better of these, the cough alone remained, (always with the pain in the region of the liver) accompanied by an unequal sort of expectoration, for it was sometimes abundant, and occasionally scanty. When the latter occurred, it was thick and almost concrete; while, on the contrary, it was thin, frothy, and mucous, if the former prevailed. With all these symptoms there were loss of appetite, wasting of flesh, and consequent debility. The acid was begun, under my direction, in doses of eight drops; and the cough was so far influenced by it, that on the night of the second day the patient slept for six hours uninterruptedly, without once coughing, an occurrence to which she had been a stranger for nearly ten months. Her appetite had completely returned, by the time she had taken about 100 drops of the acid; and after six weeks, although her side was still, and probably always will be, more or less

painful, yet, her lungs seemed to be less influenced by the morbid state of the liver. She now coughs but seldom, and then in a manner by no means distressing.

CASE XLVI. Mrs. Goodby, aged 40, residing in Marshall Street, Golden Square, requested my attendance, through my friend Mr. C. Hutchison, of Spring Garden, late principal Surgeon of the Royal Naval Hospital at Deal. She had lately miscarried, and had the misfortune of losing her husband at the same time. Her moral as well as physical system was unhinged. She lied in bed from weakness after a considerable loss of blood, had constant fever, cough, anorexia, and suffered from want of sleep. Her constitution seemed inclined to the developement of phthisis; she and her friends, indeed, considered her as consumptive. My opinion, however, being somewhat different; and finding that after recovering from the debility produced by the

miscarriage, the patient assumed a more favorable appearance, I determined on treating the cough as a sympathetic one, arising from an extensive ulcer in the right leg, of a bad character, and surrounded by occasional and wide-spreading erysipelatous inflammation, for which she had claimed the skilful aid of Mr. Hutchison. I accordingly gave her the Prussic Acid in the usual way, and watched the progress of the disorder. The cough was considerably diminished after the second day. She became more comfortable in every way, and left her bed in what may be called tolerable health. Still her leg continues sore, and occasionally inflamed, and when that is the case, the cough becomes more troublesome, either at night, or early in the morning; but, on these occasions, a dose of the acid is sure of almost instantly checking it.

Case XLVII.—Sarah Buck, aged 24, residing in Ogle Street, has suffered from a dis-

eased ovarium in the left side, ever since her last confinement. For upwards of ten months she had a continued pain in the left hypochondrium, with soreness extending occasionally across the abdomen. She wasted gradually under it, and had a constant fever. Cough of a very distressing kind came on soon afterwards, and the pulse indicated a sympathetic consumption. The means I took to remedy the original disease, which was accompanied by all its usual symptoms, not necessary to be detailed, seemed, at first, to diminish it essentially; but the cough was by no means abated in proportion. I therefore resolved to combine the Prussic Acid with the medicines she had already taken with so much advantage. She began it on the 15th of January, and this day, 12th of February, (1819) she has returned me her thanks for having released her from all the sufferings which her cough occasioned. During the whole time of its administration, little or no expectoration was present, yet no oppression at the chest arose from the absence of it.

The sympathy exerted by a diseased ovarium on the lungs is by no means singular. In the above case, there is a possibility of the original disease being entirely removed; still it is curious to observe, that although it yet continues in existence, its baneful influence on the lungs is kept completely in check by the powerful agency of the Prussic Acid.

CASE XLVIII.—" A young woman, aged 20, tall, of slight make, rather subject to a winter cough, was ill with typhus fever in the month of August, 1818. The most alarming appearance was the indication of sub-acute inflammation of the brain, when debility at the 19th day of the fever was itself very threatening. The symptoms in question were, considerable appearance of red vessels in the tunica conjunctiva, a glassy look of the cornea, and a wild expression of countenance, active delirium at intervals, and a very frequent pulse, marked by a degree of wiry hardness. Blood was

taken from the arm twice, at first to the amount of six ounces, the next time, and at the end of 24 hours, of five ounces. Leeches to the temples, cold lotion to the head, and other usual means of treatment, which is not to my present immediate purpose to describe, were employed with eventual success; danger, however, marking every step of the slow progress which was made. When a month had elapsed, from the time of the original attack, and the first symptoms of convalescence from the fever were dawning, a cough, which had been hitherto only occasional and slight, became troublesome, and in a few days to the degree of being incessant, and now attended with regular paroxysms of hectic fever,* twice in the twenty hours, the succeeding perspirations being profuse. It was in vain that the most studied means of relief, according to the ordinary rules of treatment, were employed against the cough and

* Probably from the formation of matter in the cavity of the head. A.

hectic fever, which threatened to hurry the poor exhausted patient very quickly to the grave. I then prescribed the Prussic Acid to the amount of eight drops for the twenty-four hours, in a mixture, according to the usual formula. Towards the procuring of any composure from the cough, opiates had been necessary in repeated doses each night, but were given only with partial success; but after two days use of the Acid, the narcotic was scarcely resorted to, and when four days had elapsed, it was entirely laid aside. The medicine was gradually increased in dose one drop per diem, up to twenty-four drops, and it uniformly agreed. An occasional aperient was necessary. By degrees the pulse abated from its frequency of 120; the expectoration, which had been copious and puriform, lessened, and at the end of about three weeks ceased; the hectic fever (which had been marked by rigour, hot skin, flushed cheeks, and profuse perspiration, in the usual order of succession,) also, at the end

of a week, or at the most ten days, took its leave; and in short, at the period of three weeks, all had been accomplished by the medicine which we could desire, and the several functions were so far restored to health, that she took for a short time longer simply a cascarilla mixture, with a nourishing plan of diet, and after another week, went into the country, in order to establish her convalescence. In this object she perfectly succeeded, and continues well; she being now restored to her former embonpoint, strength and spirits."*

* Communicated by Dr. Scudamore, and inserted in my first edition.

SECTION FIFTH.

WHOOPING COUGH.

This, like many other complaints, has been variously described, explained, accounted for, and treated; just as the prevailing notions have been consonant with the humoral or solid—sthenic or asthenic—spasmodic or inflammatory, doctrines in pathology. The latter being the fashionable one after whose mould we are now-a-days to shape almost every disease—it must not create surprize if the whooping-cough, which has hitherto been considered as a spasmodic affection, be now called, by a few medical writers, a disease of inflammation. Hence, do we find in certain recent publications, some spirited protests, from one or two practitioners (who must certainly have forgot their *Cullen*, or know more than that celebrated physician) against the practice of treating the whooping-cough simply by gentle evacuants, and anti-spasmodic or sedative medicines—nor is the Prussic Acid, which has

been commended in this malady, spared of its full share of their wrath. Hence, again, are we told that "to attempt to cure this disease by any other means than bleeding and mercury, is an absurdity; and *as mercury*, (they say) *when recommended to combat acute inflammation, must be employed in so vigorous a manner as to affect the mouth, or the physician may as well "consider himself accessary to the death of the patient"*— it follows that children must be salivated to get rid of the whooping-cough! To be serious: I hope that the day will never arise when these bold experimental results of hospital or dispensary practice, in which no responsibility attaches to the experimentor acting upon patients, who "were not seen afterwards," who "were lost sight of," or who "were seen no more," ere they were cured—will be assumed as examples for our conduct in private practice. It is one thing to prescribe in the presence of a few admiring pupils, for a patient, who, when admitted within the walls of an hospital,

or on the registers of a dispensary, seems to surrender every right to complain and be dissatisfied; and another, to treat a disease occurring within the bosom of an anxiously-watching family, whose every look and question are directed to ascertain the physician's sound judgment, and mature personal experience. It is this sort of fearful responsibility attached to the latter situation, more than any which may belong to the office of a physician in public practice, which tempers the high-mettled fancy of a youthful schemer into the sober mindfulness of a rational practitioner.

The whooping-cough is a complaint so well known, that to attempt giving any symptomatic or characteristic description of it in this place, would be useless. I will, however, state, once for all, that the whooping-cough, in itself, is *never* an inflammatory disease—for no traces of inflammation have been found in the respiratory organs of those who have fallen victims to it—and that when the complaint has been very

violent, and has lasted a great length of time, and then only, tokens of inflammation have been found in the brain, as the result of strong and often repeated spasms of the organs of respiration, producing a great determination of blood to the head.*

I shall now proceed to detail a few cases of whooping-cough, in which I have made use of no other medicine, than the Prussic Acid, and with success: and I do this the more willingly, as

* In the 1st volume of the "Memoire Scientifiche e letterarie dell' Ateneo di Treviso," published in 1817, there is a paper containing the result of extensive pathological inquiries, made by several physicians and surgeons of that town, into the nature and seat of various complaints. On the subject of whooping-cough, which had been epidemical in 1816 at Treviso, a table of 23 anatomical examinations of children after death is given, from which it appears, that in all of them there were more or less signs of turgidity of the blood vessels in the head, or serous effusion; that no symptoms of disease occurred in the chest, except in a few individuals, who presented an incipient phlogosis, or plethora, or serous effusion in that cavity. The wind-pipe was found constantly healthy, although lined with a frothy, blackish and adhesive mucus.

my public and private practice for the last two years has supplied me with abundant opportunity for so doing—and also, because I have been blamed for having, in my first edition, simply alluded to, instead of giving cases of the complaint at full length.

CASE XLIX.—Two children of Major Fitzgerald, fell ill with the whooping-cough in June 1819, at some distance from town; and having been early consulted respecting the best mode of treating them, I lost not a moment in suggesting the use of the Prussic Acid. I also requested to be informed of any change that might take place during its use, and of the apparent effect of that medicine on the children. On the 23d of the same month I received a letter, stating that "on the eleventh day after taking the Prussic Acid, my little patients were almost recovered—that the youngest had ceased to cough the last three days—while the eldest coughed still, but a loose, easy, common sort

of cough; and that although there was still a whoop accompanying it at night, it was but a feeble one." "The disorder," the letter continued, "was dying away, as they eat heartily, and the blackness under the eyes was quite gone, as well as the fever, langour, restlessness, &c." I recommended a change of air, and this advice was followed almost immediately. The cough soon afterwards left the eldest girl also; and they both returned to their home quite recovered. A relapse, however, occurred in the latter place, and the Prussic Acid was again had recourse to, and continued until no trace of the complaint remained behind.

CASE L.—Four young children, three boys and a girl, of Wm. Hamilton, Esq. were attacked, almost simultaneously with the whooping cough, in the month of May last; the two youngest with fever and symptoms of pyrexia, to which vomiting, soon after, succeeded. After opening the bowels with suitable medicines, and

giving some cooling powders to those who had fever, I proceeded to administer the Prussic Acid to all, at first in an almond emulsion, and next in a camphorated mixture. The effect of the medicine was not the same in all four. One of the patients ceased to whoop almost immediately. The two next continued to cough for some time longer, and a fourth, the youngest but one, seemed scarcely to feel the influence of the medicine; for he continued, even after the complete recovery of his brothers and sister, to cough, whoop, and vomit. His general health too, appeared to suffer from the prolongation of the complaint. The girl was the first who got well; for at the end of ten days she was scarcely ever heard to cough, and then in the ordinary manner, only, of people affected with catarrh. She had no relapse. Three of her brothers got well next—that is within the third week of taking the Acid; but a parotid and tonsillar swelling, with fever, occurred in one of them at the same time, which required

the application of leeches, and the adoption of a brisk system of evacuation by the bowels. The Prussic Acid was continued notwithstanding; the patient taking a tea-spoonful of the mixture, containing about one drop of the Acid, every three hours. At the end of six weeks his recovery, also, was complete.

CASE LI.—Master Hodges, aged nine years, was seized with the whooping cough almost suddenly in March last, when I was desired to see him. This boy had been under my care before, in consequence of mesenteric obstruction, of which he had got quite well by means of a suitable treatment. His former complaint had left him weak, and I considered him an unfavourable subject for such a trying disease as the whooping cough. I found the young sufferer with a quick pulse, much thirst, and considerable difficulty of breathing; hard cough, with the peculiar convulsive whoop at each paroxysm, after which his food was brought

up, and much phlegm expectorated. A mixture of oil of almonds, mucilage of gum arabic, balsam of tolu, and Prussic Acid, was ordered, in the dose of a tea-spoonful taken frequently in the day, and particularly after each paroxysm. In a very few days the breathing became freer—the cough less troublesome—and the whoop less constant; the vomiting, however, continuing as before, whenever he had any severe attack. Finding the respiratory function much improved, I changed the above mixture for one composed of camphor, hyoscyamus, and Prussic Acid; the dose of the latter to be taken was double that which had been prescribed before. The attacks, soon after this change was made in the medicine, became less frequent—vomiting occurred but seldom—and, in another fortnight, the disease had wholly disappeared. One of his brothers was cured by nearly the same means some time afterwards.

CASES LII. and LIII.—Master Reid and

Miss Reid were put under my care, while suffering under severe paroxysms of pertussis. The complaint had lasted some time, and every medicine that three different medical practitioners, who had been consulted, could prescribe or devise, was tried in vain. Application was made to me simply on account of the Prussic Acid, to which the mother was anxious to give a trial. Although I have but little confidence in this medicine as a remedy for the complaint in question, when of long standing, I was willing to comply with the mother's request; and the Prussic Acid was administered precisely in the same manner as that described towards the conclusion of the preceding case. Contrary to my expectations, these two patients recovered much sooner than I had been led to suppose; for at the second visit, the disease had so far dwindled into a common sort of easy cough, without either whoop, fever, vomiting, or other uneasiness, that I felt there was no longer any occasion for my services; I there-

fore took my leave, requesting to be informed should the children not soon get quite well. No summons ever reached me afterwards; so that it may fairly be supposed, that the young patients were not long in recovering their natural health.

In my public practice at the Westminster General Dispensary, I have had numerous opportunities of witnessing the beneficial effects of the hydro-cyanic acid in whooping-cough. Out of many cases of that complaint which I have thus treated, I have reason more particularly to mention those of two boys and a girl named Dudbridge, and of Mary Marr, aged 19 months, because application was made to me, after they had all failed in obtaining relief from the ordinary means prescribed by other physicians, of whose advice they had enjoyed the benefit on several other occasions at public charities. From my register it appears, that the recovery of the three Dudbridge's took

place in the space of twenty-six days, and that of Mary Marr in about ten days. The latter had been ill ten weeks when she was first seen by me. The Prussic Acid employed at the Dispensary was procured from Mr. Garden, and was kept and administered with great care by the Apothecary.

Mr. Pitt, in his communication to me, says, "I have given the Prussic Acid in a case of whooping-cough, with greater success than I ever exhibited any medicine before."

Mr. Rudland has sent me the following case of whooping-cough, dated Dartmouth, October 10th, 1819. I give it precisely in his own words, because it is drawn up with much care, and contains details which cannot fail to prove interesting to those who, with the author, think that the Prussic Acid may be employed with much benefit against the distressing complaint, which forms the subject of the present section.

CASE LIV. — "Mary Ann B——, a fine child, eight months old, born of a lymphatic parent, was attacked in December 1818, with whooping-cough, at that time very prevalent in this town. The most approved and active curative means were adopted, but with little obvious benefit. The cough continued obstinate and harassing; with difficult expectoration and frequent vomiting, particularly after taking any food or the breast. During the night, the paroxysms became so frequent and severe, as scarcely to allow the little sufferer time to recover from one fit of coughing before she experienced another. Sometimes her strength was so much exhausted by the violence of the paroxysm, that she would remain in a comatose state till visited by the succeeding attack. Her nights were consequently restless and distressing. She had lost all relish for food, and had become much emaciated. Her brother, a few years older, attacked about the same time, had fallen a victim to the disease; and as medicine

alone, in the present case, failed to relieve her, she was advised a change of air, and was therefore taken fifteen miles into the country. For the first week the change appeared highly beneficial; her cough, vomiting, and difficulty of breathing were much relieved; her appetite increased, and great hopes were entertained of a speedy recovery. A short time shewed the fallacy of these hopes, in the return of the distressing symptoms, with equal if not increased severity. The fits of coughing became more frequent, and expectoration so difficult, that at each paroxysm, fears were entertained that the little sufferer would eventually be suffocated. Six weeks after her removal from this place, she returned, and I was requested to see her. I found her in a comatose state after a severe fit of coughing, weak and emaciated, with laborious respiration, feeble and irregular pulse, and her face, head and neck covered with a clammy sweat. Having before tried every thing usually had recourse to upon such occa-

sions, I determined to give the Hydro-cyanic Acid, although I had little hopes, I must confess, of any favourable result from it, in this apparently hopeless case. But as I considered, even a temporary relief a great desideratum, if it were possible to procure it, I ordered her the following mixture:

℞. Acidi Hydrocyanici m. iii.
Misturæ amygdalæ f℥ iss.
Syrupi tolutani f℥ ii.
F. M. capiat cochl. ii minima quartis horis.

"This occurred on the 25th of May, and on the following morning I found she had passed a bett er night. The paroxysms were still severe, but her breathing was something better, and she had vomited but once since taking the acid. Her bowels being rather costive, a few grains of rhubarb were ordered, and the mixture directed to be continued every three hours. In the evening she was evidently better, and had taken the breast twice, which she had refused for several days before. The rhubarb had relieved her bowels. The night from the

26th to the 27th was pretty good, the patient coughed but seldom, and the paroxysms had been less severe. I found her sleeping in her cradle—her pulse more natural—and her breathing free. The mixture to be continued, with an increase of one drop of the acid. The amendment went on regularly the following day, and became more apparent towards the evening, when I found that she had continued to take the breast, had besides taken a little panada, and had not vomited since the preceding day. On the 28th, the breathing was much better, pulse more natural, coughed twice only in the night. Paroxysms were comparatively trifling. Had several hours comfortable sleep and awoke much refreshed. Expectoration copious, but much easier. The mixture with the acid was directed to be continued. On the 29th the report was, that she had passed a good night, had coughed only once towards the morning, her expectoration was free, and much decreased, pulse, tongue and skin natural. Another drop

of the acid was added to the mixture, which I gave directions should be continued."

"I conceive it unnecessary to give a further diurnal detail of this case, as from this period her recovery was progressive and rapid; for at the end of ten days from her commencing the acid, she was convalescent. A diminished quantity of the acid in combination with a vegetable tonic, was continued at more distant intervals for ten days longer, at which period she was free from disease, and has not experienced any return."

It would be a waste of time to attempt giving the numerous authorities in support of the assertion, that the Prussic Acid is one of the best remedies that have hitherto been proposed in whooping-cough, unattended by any severe subsequent inflammation. Works have been written purposely to prove it—reports have been published from several public institutions abroad to confirm it—and many respectable and emi-

nent practitioners have testified it in the most unequivocal language in the public journals.

At the same time, I am not disposed to withhold from the public, that I have occasionally been altogether disappointed in my expectations of the effects of the Prussic Acid in whooping-cough; and that in some few instances, the beneficial result obtained from it, was not so rapid as in the majority of cases, it will be found to be. Is a medicine the less commendable, because some instances of its failure are recorded.?

SECTION SIXTH.

ASTHMA.

Nothing is more distressing to witness than what is called an attack of asthma; the patient when seized with it, starts up in bed, and calls aloud for the windows and doors to be open, has all the curtains undrawn, and seeks for air with a panting breast and gaping mouth. The lower jaw is forced as far downward as possible, in hopes of a greater inspiration. After some time, cough of the most harassing kind comes on, expectoration occasionally follows, and the patient sinks quite exhausted on his pillow, without much prospect of rest. Such is the terrible affection, I next thought it possible to alleviate, by means of the Prussic Acid. Those among my readers who are professional men, will readily see the analogy which brought me to such a determination, and they will be satisfied to find that success proved the expediency of the measure. Hitherto I have had but few

opportunities of this kind, in which I have employed the Prussic Acid.

Case LV.—Mr. K——, an elderly gentleman, nearly related to the author, has been suffering from asthma for upwards of six years. On the approach of every winter, his complaint assumes an alarming type, the breathing becomes exceedingly difficult, and is further oppressed by the smallest exertion, or by cold air and foggy weather. The attacks come on at uncertain periods, and during the intervals which elapse between them, a short, dry, snappish, and incessant cough, unattended by any expectoration, renders him uncomfortable by day, and sleepless by night. His appetite diminishes gradually on such occasions, and nothing but the slightest food can be taken into the stomach without producing the worst symptoms. The secretions and excretions are very irregular, the latter often suspended. There is a tendency to œdematous swelling of the legs,

with chilliness ; the pulse is quiet in the morning, at which time the patient is generally better; but it becomes hurried towards noon, and is decidedly febrile and irregular in the evening. There is at times such an anxiety and distress in his breathing, as to shock the beholder at the convulsive swellings into which the muscles of the face are thrown during the efforts of respiration. This state of exquisite irritability—this inexpressible anguish, and all the sufferings it produces, were removed by the free but cautious exhibition of the diluted Hydro-cyanic Acid. Mr. K—— now coughs but seldom, sleeps well at night, becomes more inured to the change of weather, can easily bear exercise, and ascends a staircase without being forced to stop, or without any oppression at the chest. His own expressions are these:—"I feel more comfortable, and in better health, than I have felt this long while." No depressing effects were produced in this case by the acid; and he is so fond of having recourse to

it, whenever a slight attack of cough returns, that I have been obliged to caution him against the immoderate and unnecessary use of the medicine.

CASE LVI.—"Sarah R——, aged 42, of a lymphatic constitution, the mother of several children, has been for many years subject to dyspnœa, habitual cough, and occasional attacks of spasmodic asthma. Until the last two years she only experienced severe attacks in the winter season; but now they are easily produced by any exciting cause, as exposure to a cold or damp atmosphere, or any sudden change of temperature. During the last eighteen months she has been repeatedly under my care, and I have as often witnessed her extreme sufferings, without ability to relieve them in any sensible degree; although æther, opium, and other powerful antispasmodics were administered in every gradation of strength, and variety of combination."

"On the 26th of October, 1819, she suffered a severe paroxysm, after having been caught in a shower of rain, to which she attributes it. I did not see her till the evening of the 27th, when I learned from her attendants (for she was unable to articulate) that she had been attacked the preceding evening, and had passed a dreadful night, with but little remission during the day. She had been led to the window for fresh air, where she stood supported by her friends; having the most laborious respiration I ever witnessed, her mouth half open, her shoulders elevated; both inspiration and expiration being performed with the greatest difficulty, and with a loud wheezing noise. Her countenance was morbidly pale, and indicative of the most extreme anguish and anxiety; her pulse weak and irregular, and she evidently suffered great constriction of the thorax: no doubt from spasmodic action of the muscular fibres of the bronchial system, and consequently obstructed circulation."

"Venesection had been tried at the very commencement of former paroxysms, without any evident advantage; and in this instance I conceive it would have been highly injurious, as from the time elapsed since the attack, it was probable, that either exhalation or effusion had already taken place from the obstructed pulmonary vessels. Having given the Hydro-cyanic-Acid, with instant relief, in a slighter case of *asthma convulsivum*, I was determined to try it in this, and therefore told her, I would send her something which I trusted would relieve her soon. This assurance (given I must confess with an assumed confidence) was received by her with a melancholy negative shake of the head, and raising her eyes to Heaven, she intimated by her gesticulations, that it was from thence only she could expect relief."

℞. Acidi Hydro-cyanici min. xij.
Mistura Amygdalæ f℥ vj.
Syrupi Tolutani f℥ iij.

Fiat Mistura cujus capiat partem quartam secunda quaque horâ.

"May 27th 1819, she felt something easier soon after taking the first dose, which was given at seven P.M.; and at nine it was repeated with still stronger evidence of its powerful and salutary influence. Before taking the third dose, the most alarming symptoms were greatly relieved; her respiration became freer, her pulse more regular, her countenance indicating a considerable alleviation of her suffering; and before she fell asleep, which was about half an hour after her taking the third dose, she was able to articulate and express her surprise at the sudden and unexpected relief. In the morning I learned from herself, that she had slept several hours, and towards the morning, was able to lay down in a horizontal position, which she had not done for several nights previous to her late severe attack. Her pulse was now more natural, her breathing tolerably easy; but she still complained of considerable pain, and constriction in the thorax."

Rept. Mistura ut antea.

"In the evening, she experienced a slight increase of difficulty of breathing, &c. &c. and two drops of the acid were added to the evening dose of the mixture. She passed a good night, and continued daily mending, without experiencing any further relapse, and at the end of a week, from her first taking the acid (which was only increased to 26 drops in the 24 hours) she was freer from cough and difficulty of breathing, than she had been for several months."

"It is worthy of remark, that after former paroxysms, although not so severe, great difficulty of breathing, incessant cough, and copious expectoration, generally remained for weeks, and sometimes continued until a fresh paroxysm. In this instance, notwithstanding the time elapsed before its administration, the Hydro-cyanic Acid appears to have removed the morbid spasmodic action of the muscular fibres of the bronchial system, before exhalation or effusion had taken place (at least to any

extent); thus happily preventing the usual subsequent difficulty of breathing, &c. and rendering expectoration unnecessary for the further relief of the thoracic viscera."

CASE LVII. "In consequence of the relief which this patient experienced, I was directed to see a distant relation, laboring under the same complaint, and in this case, the Hydrocyanic Acid was given with the most decided advantage; and from what I have seen of its effects in other cases of spasmodic asthma, I am led to believe, that it may not only be given with perfect safety in most cases of that distressing disease, but that it will be found one of the most valuable articles in the materia medica, in all spasmodic affections."*

* The two last cases are from Mr. Rudland.

SECTION SEVENTH.

HÆMORRHAGES—PAINFUL MENSTRUATION. ABORTION.

In my first edition, I merely alluded to the faculty which the Hydro-cyanic Acid seemed to possess of arresting hæmorrhages, when dependent on nervous excitement and irritability. I then mentioned a case of threatening abortion, attended with much pain and flooding, in which the use of the Hydro-cyanic Acid had arrested the latter, and quieted the former; while abortion itself was prevented. I also stated a case of spitting of blood, cured in the short period of five days with the same medicine, by Mr. A. T. Thomson. I am now enabled, from subsequent experience, to enlarge on this highly important subject, and to lay before the public the following detailed cases, presenting matter for the most pleasing consideration. Let those "whose expectations in controlling *hæmorrhages* by means of the

Hydro-cyanic Acid, have not been realized *in their practice,*" read them with attention, and then once more attack any case of *hæmorrhage,* which *their practice* may offer them. by means of this powerful medicine.*

CASE LVIII.—"A man, 25 years of age, of a strong constitution, robust, and of a choleric temperament; subject from his infancy to bleeding from the nose, and latterly to hæmorrhoids, complained for about a year of a pain in the epigastic region, accompanied with a strong pulsation in that part. In the mean time his complaint did not prevent him from attending

* I cannot, in this place, forbear to remind the writer of a recent pamphlet on the Prussic Acid, that no expectations were held forth in the former edition of this work, of the "*marvellous*" and "*miraculous*" effects of that medicine in controlling pulmonary and other hæmorrhages, as he has been pleased to assert, in allusion to some particular author—and that the having given the air of a quotation to those gratuitous epithets, by means of two malicious inverted commas, will scarcely succeed in preventing his readers from considering them as the poetical invention of his brain.

to his trade. One day after having travelled about to various places in a rough vehicle: he experienced a considerable augmentation of pain, which was followed by a copious vomiting of black blood, and a great degree of debility. Returned home, he complained of anxiety—his countenance expressed but little animation; the heat of the body was increased; his pulse was hard and full, and his bowels were constipated. We gave him a decoction of tamarinds; but he was not able to retain the medicine. The *irritability* of the stomach increased to such a degree, that he rejected every thing that he took, even a solution of gum-arabic. We were obliged to have recourse to glysters, and cold applications over the stomach; despite of all, the vomiting continued, becoming more and more copious, reducing the patient astonishingly. The pulse became small and feeble, his extremities were cold, and the constipation very obstinate. In this state of things, we determined to use the laurel-water in the dose

of sixty drops in a drink, of which a certain quantity was given every two hours, and at last every hour. It was the only medicine the patient could retain. It merits in this case, the eulogium which Thilineus has given it. The first doses sensibly relieved the patient. The vomiting returned but once a day, in very small quantity, and finally ceased; as also did the pain in the epigastic region, and the anxiety. The patient was in a short time restored, and continues in good health to this day."*

CASE LIX.—The Honorable Mrs. ——, consulted me on the subject of an alarming complaint in the chest, from which she had suffered for upwards of a twelvemonth. At the period of my first visit, independent of every other symptom by which her illness was characterized, and which do not form the object of the present observation, I found that

* From the American Recorder for 1819, Vol. II page 468-9.

she usually coughed up a small tea cupful of blood from the lungs, frothy, and of a vivid colour, every morning on rising from bed, and occasionally during the day. She had taken the sulphuric acid, bark, and every sort of astringent and tonic medicine, under the directions of two professional gentlemen in the country, without success. To relieve this symptom, and this symptom only, I prescribed two drops of the Prussic Acid every three hours, in a camphorated mixture, as the only vehicle which the delicate stomach of the patient could bear. Two days afterwards, on rising from her bed, the patient was attacked with her usual paroxysm of cough; but hæmoptysis did not follow; nor did it recur until some months from that period, when it was again checked with the same rapidity, and by the same medicine.

Case LX.—Ann Dunn, æt. 42, admitted a patient on the register of the Physician-ac-

coucher, at the Westminster General Dispensary, under the No. 29051, on the 29th of March, 1819, suckled her last child for the space of 17 months, and menstruated during the greatest part of that time. On weaning it, uterine hæmorrhage, to an alarming extent, followed, and lasted about ten weeks, accompanied by a severe shooting pain in the breast; although the milk had readily vanished in the course of two or three days, subsequent to the period of ablactation. On my questioning her the day of her admission, I ascertained that the flooding was still continuing—that some such similar pains affect her during menstruation—and that on those occasions it even extends to the groin, down the thighs, and as far as the calf of the legs. The pulse is small and wiry—the bowels regular—the tongue has a natural appearance.

℞. Infusi rosæ f℥ viii.
Tincturæ rhataniæ f℥ v.
Acidi Sulphurici m: xxx.

F. M Cochleatim, tertiis horis, hauriendæ.

On the 2d of April, she returned to me unrelieved, after having taken the above mixture for four days. The hæmorrhage continues unabated, and the patient seems greatly debilitated. I then had recourse to the following formula.

℞. Infusi cascarillæ f℥ vi.
Acidi Hydrocyanici m. xii.
F. M. Capiat coch: ii. majora quater quotidie.

On the 5th of April, the pain had vanished, and the discharge considerably diminished. On the 9th, the flooding had completely ceased, notwithstanding which, I recommended a continuation of the medicine for two days longer. On the 12th she had the misfortune of falling violently on the projecting edge of a step, by which she severely injured the small of her back. Great pain ensued, both locally and in the chest, attended with considerable oppression. She could not leave her bed; but the uterine hæmorrhage did not return. Leeches

were applied to the affected part, as well as to the chest, which gave relief. A degree of fever supervened, but was almost immediately checked by a repetition of the Hydro-cyanic acid, in small and frequent doses without the cascarilla; and the patient was ultimately discharged perfectly cured on the 30th of the same month.

I copy the following notes of a case of spitting of blood during pregnancy, as they appear on my register at the Westminster General Dispensary, taken by one of my pupils.

CASE LXI.—March 31, 1819.—Elizabeth Seben, æt. 38, residing at No. 4, Lambeth Walk, of a full habit of body and sanguine temperament, has had three living children at the 7th and 8th month, by a former marriage, besides a miscarriage; and is now again pregnant after having been married about three years to her present husband. She complains

of head-ach and considerable cough, with much expectoration mixed with large coagula of blood, some of which she has brought for inspection. The pulse is full and frequent; she suffers greatly from pain in her back, and a bearing down. The tongue is red and clean, the bowels regular, the movements of the child lively.

V. S. é brachio ad emissionem sanguinis f℥ xv. statim. Admoveantur hirudines ferreæ regioni lumbari ad f℥ viii.

April 3d.—The pain is nearly gone—she has no head-ach—the pulse is soft—the tongue of a pale colour; but the cough continues, and this day she has shewn me a small quantity of florid blood which she brought up during a paroxysm of coughing. Some appearances of uterine discharge occurred after the bleeding, and the patient is afraid of a miscarriage taking place, as she suffered considerably on many previous occasions from that accident. The following mixture was then prescribed.

℞. Emuls: amygdal: f ʒ viii.
Acidi Hydrocyanici m. viii.
Spir: Juniper: f ʒ i.
F. M. capiat: cochl: ii. maxuma ter quotidie, & semel horâ decubitus.

April 5.—The hæmoptysis stopped immediately, and the cough was considerably relieved. She was desired to continue the use of the acid, particularly if she felt any pain or perceived any fresh symptom of hæmorrhage. This counsel she followed strictly, and on the 22d she was discharged quite well, and she proceeded regularly through the periods of her pregnancy, at the end of which she was safely delivered of a girl alive and healthy.

CASE LXII. — A poor woman living at No. 3, Salutation Court, Holborn, in a most wretched dwelling, bereft of every article of furniture, except a lowly and filthy pallet, on which she laid stretched in great agony of pain, was transferred to me by one of the Physicians

of the Westminster General Dispensary, in the spring of 1819, in consequence of the appearance of uterine hemorrhage. On my first visit I ascertained, by proper examination, that the patient suffered from some affection of the right ovarium, which was exceedingly painful, particularly on pressure being made upon it; and also from inflammation of the womb, which felt hot, throbbing and enlarged to the touch, and from which a copious discharge of blood flowed without much intermission. Several parts of her linen and the bed were shewn to me, drenched by the hæmorrhage. There was a look of such anguish in her countenance, a hectic flush, and the expression of so much alarm, that I endeavoured in the first place to calm her spirits, by promising an immediate aleviation of her sufferings. I therefore prescribed a fluid drachm of tincture of opium, to be taken immediately, and to be repeated on the following day, if the pain did not considerably abate before that time. The pulse being small,

and frequent, the tongue furred and yellow, and the abdomen distended, (probably from her bowels not having acted for some days before), a brisk purgative medicine was administered, and the following pills ordered for the night.

℞. Extracti colocynt: c̄ gr. iv.
——— conii gr. v.
Camphoræ lucidæ gr. ij.
F. pil: iii. horâ decubitus deglutiendæ.

Warm fomentations were directed at the same time over that part of the abdomen where the affected ovarium seemed to form a more prominent tumor. I had felt inclined, at first, from some of the symptoms, to bleed generally; but her debilitated condition forbad the adoption of such a measure; and leeches alone were applied to the painful part. On our visit the following day, we found that she had passed a quiet night, that the pain had considerably abated, and that, after four abundant evacuations, she had felt a general relief from every symptom, except the discharge, which con-

tinued much the same. The leeches had bled copiously, and the fomentations, besides encouraging the flow of blood, seemed to have lulled the local pain. The pulse was softer, and more natural, but weak. The tongue had a better appearance. She was desired to take the same medicines as before. Two days elapsed before she could be seen again, when she was found sitting up in bed, quite free from pain, fever, or uneasiness; but not daring to rise from bed and walk, as on making that experiment the evening before, the flooding had increased with great violence. Sulphuric acid in infusion of roses, and a large quantity of the compound extract of rhatany were then administered; but with no apparent benefit. The hæmorrhage continued for several days, at the end of which time the local pain again made its appearance, and the patient was threatened with all her former sufferings. The pulse was now found to be full and hurried, and there was, moreover, considerable oppression at the chest,

great tenderness of the right side of the abdomen just above the groin, and intense head-ach. These symptoms induced me to prescribe the Prussic Acid with a view to obviate the effects of inflammation, and to check the uterine hæmorrhage. It was given in doses of three drops every two hours, in peppermint water, and continued for a whole week, at the end of which, the hæmorrhage, the pain, and every untoward symptom, had disappeared. The enlargement before alluded to continues undiminished; but on examination, the os and cervix uteri were found soft, and of a natural temperature. Mr. Boardman, who kindly attends with me at the Dispensary on many occasions, visited this woman more than a twelvemonth afterwards, at my request, and found that she continued well; but that she still complained of some uneasiness in the right groin. Neither the hæmorrhage, nor any acute pain in the uterine system, had since made its appearance.

CASE LXIII.—Elizabeth Britten, miscarried on the 18th March, 1820, and suffered most excruciating pains for several hours afterwards. The flooding which followed had been very irregular, and when suspended, the sensation of pain in the womb and loins was very acute. I was desired to see her on the day after the accident. I found her in great agony, sitting on the edge of a chair, holding her knees with her hands, bending her body forward, her face expressive of great inward suffering. I examined what had come away, and discovered a fœtus of about three months growth. The placenta was not to be seen; there were only a few compact coagula present. The patient was in other respects well, and the miscarriage she attributed to a fright, in consequence of some people quarrelling in the same house. I made an examination, and ascertained that the os uteri was still dilated. Conceiving that the pain arose from the uterine contractions directed to the expulsion of a re-

tained placenta, and coagulated blood, I administered a brisk purge, and desired her to take two table-spoonfuls of the Hydro-cyanic mixture, No. 9. On the following day I was informed, that she had expelled what was considered the after-birth, together with several *lumps*, &c.—that the pain seemed to diminish immediately after, but that it had not wholly disappeared until she had taken the whole bottle of the mixture in the course of the night.

SECTION EIGHTH.

NERVOUS DISEASES—AFFECTIONS OF THE STOMACH.

In proportion as the complaints, in which the Hydro-cyanic Acid has been recommended, are less distinct in their characters and nature; so is the effect of that medicine less apparent and beneficial. In that numerous class of diseases, usually denominated *nervous*, the Hydro-cyanic Acid has been tried with some success —and in one or two cases which will be detailed presently, the benefit derived from that medicine has been very obvious; but in others it completely failed. In affections of the stomach, which are so nearly allied to *nervous* complaints, the Hydro-cyanic Acid is stated to possess great power; and the authority of Dr. Elliotson, who has published a tract professedly on this subject, may now be added to the testimony of Thilenius, Sprengel, &c. and more recently of Thomson, who have called the

attention of the profession to the power of the Hydro-cyanic Acid in derangements of the stomach. His evidence will form a suitable appendix to what was already known on the subject.

The anomaly of *nervous diseases*, as they have been called, renders any thing like an accurate description of their symptoms, a very difficult task. It is true that there are nerves, and that as part of our structure, they are probably as much subject to derangements, as any other constituent part of our animal organization. But we are so little acquainted with their physiology, that we cannot pretend to know much of their diseases. Every complaint which we cannot well class with other well known affections, we often attribute to the nerves; and in styling a disease *nervous*, we are often using a mere name to denote, at one and the same time, a vast number of phenomena, definite in themselves; such as tremor, fainting, palpitations, throbbing, flying pains, flatulency,

indigestion, uneasy sensations, spasms, constipation, sudden startings, sighing, laughing, a lump in the throat, and the whole, long, train of ailments which are known to affect, in a more particular manner, the fine lady—the irritable—persons leading a sedentary life—especially authors, projectors, ambitious schemers, disappointed politicians, with many more restless and discontented beings. It will, therefore, be scarcely expected of me, in this place, that I should enter into a descriptive statement of the complaints in question. The task would require more time and space than I can devote in the drawing up of the present work; and the few cases I am about to relate, are merely brought forward to shew the propriety of trying new remedies in diseases of the nervous system, be these of what specific nature they may, when they have proved rebels to every other medicine.

With regard to what have been properly called affections of the stomach, I should wish

the reader to consider well the letter from Mr. A. T. Thomson, which I have inserted at the end of the next section.

CASE LXIV.—Mrs. T. was leaving a milliner's shop on her return home, when a dog, which was running furiously along the pavement, suddenly fastened on her left thigh, and tearing the clothes with his paws and teeth, pierced with the latter to the quick, and inflicted a considerable wound. The lady was so alarmed at the accident, that she nearly fainted, and was carried into a shop, whither I was hastily summoned as the nearest physician. This occurred in June 1819. Informed of the nature of the case, I prevailed upon Mrs. T. to suffer me to examine the part; and finding a considerable laceration, with the marks of four teeth deep within the muscles, bleeding, though not copiously, and painful, I made three or four incisions with a lancet, the only instrument I had with me, so as to render what was a punc-

tured an open wound. Over this I threw about two fluid drachms of caustic ammonia. The pain that followed was excessive; but the appearance of such active measures had the effect of quieting Mrs. T——'s mind, and of dissipating her fears. The following mixture was then prescribed, and she was requested to remain quiet for some days; but to court the society of friends.

R. Misturæ camphoræ f℥ viii.
Acidi Hydro-cyanici m. xx.
Spiri: Ætheris Nitrici f℥ ss.

F. M. L. A. cujus capiat coch. j. maximum tertiis horis.

On the third day after the accident, a sudden sensation of choaking, with many symptoms of hysteria came on, lasted a few hours, and again occurred at night. On visiting my patient the following morning, I found her under considerable agitation, and in much pain. Her pulse was frequent and irregular; she complained of

an incessant throbbing at her heart, on each side of the neck, and in her head—there was a general tremor, paleness of the cheeks and tongue —eyes fixed and staring—faintness—dread of death. The wound was covered by a brown coloured scab, and surrounded by much erysipelatous inflammation; it was highly painful. I ordered a common poultice to be applied to it, and desired the patient to take a table spoonful of the following mixture immediately, and to repeat it every two hours, until more composed.

℞. Aquæ pimentæ f℥ v.
Sodæ
Magnesiae } Sulphatis sing. f℥ iss.
Træ Sennæ f℥ iii.
—· Camphoræ comp: f℥ ii.

The Hydro-cyanic mixture to be resumed in the evening, and continued as before. I requested that she should never be left alone—that nothing but cheerful subjects of conversations should be mentioned before her—and

that, above all, no questions about her health and late accident should be put to her by any of her friends, under the present circumstances. On the 8th day, a scab of the size of a penny, black and dense, fell from the wound, and left a sore surface of fair appearance, discharging laudable pus. The spirits of the patient were calmer—she had slept better, though at intervals only—the bowels were kept in excellent order by means of the second mixture—and the continuation of the Hydro-cyanic acid appeared to keep the pulse in check, by diminishing the nervous excitement. Once, during the two following weeks, a recurrence took place of the nervous symptoms above described, with the addition of an acute pain in the affected limb, and particularly along the inside of the thigh, and down to the calf of the leg. These gave way under the use of opium. The sore was dressed with savine ointment, and kept open for some time. On the 25th day after the accident, the sore was completely healed; but

great symptoms of uneasiness prevailed. The patient felt, or fancied she felt a difficulty in swallowing, and complained of a lump rising in the throat—the pain now extended to both limbs, and was particularly acute in the region of the sacrum, on each side of that bone. She could not bear the slightest pressure upon the part, and could not lie on her back at night. I ordered leeches to be applied to it. The Hydro-cyanic mixture to be continued, a table spoonful every hour. At the end of the fifth week, the patient expressed herself as quite well, and free from pain. Her look, tongue, and pulse were natural. She had regained her appetite—slept well, and for many hours without interruption—could bear to be left alone without feeling any apprehension—and received once more into her presence, her children, at whose sight she had, before, expressed great aversion. In this state I left her, when I quitted this country in August, 1819, for the continent; and desired her, should she require medical

assistance, to apply to a friend of mine, whom I named to her. I requested the husband, at the same time, to take notice of any thing particular which he might observe in her, that I might be informed of it hereafter.

On my return to England, I called upon Mrs. T. and found that nothing material had occurred during my absence respecting her health, and that she had continued well since the period of my last visit.

The author is not disposed to call this a case of Hydrophobia; but would the accident have led to that complaint, if left to itself? And if so, what prevented such a result?—the early application of the caustic ammonia to the part, or the internal use of the Hydro-cyanic Acid—or both? It never could be ascertained whether the dog, by which the wound had been inflicted was actually in a rabid state, for he resumed his hasty career immediately after the attack, and in the confusion of the moment escaped deten-

tion; but might it not be fairly presumed, from the peculiarities of the aggression, that the animal was probably affected? That symptoms of alarm succeeded the accident, the reader who has perused this case with attention, will have readily discovered; but how far they were the effect of any particular morbid affection, the result of inoculated virus, or the mere exponents of a mind travailed by keen apprehension, and the fancied prospect of danger, I leave to the profession to decide.

CASE LXV.—A young lady of the most interesting character, great resignation, and firmness of mind, has been suffering for some years under a very distressing nervous complaint, simulating, at times, from the severity of the symptoms, its obstinate duration, and the particular functions which seem affected, the disease which has been called *syncope anginosa*. She is under the care of Dr. Young and myself. To relieve the severe pain which pervades

the chest during the paroxysms, as well as with a view to render respiration and deglutition freer on those occasions, and also to quiet the numerous pulsations which manifest themselves in many parts of the body, the Prussic Acid was recommended conjointly by us, independent of every other part of the treatment which has been followed in her case, and which is not my intention in this place to state, no more than to detail the symptoms and history of the case itself. On a recent occasion " she was seized with a most severe constrictory pain in the chest, extending to the back and the left arm, in a line of, and as far down as the middle finger. The throat was likewise so uneasy and painful, that she *could not swallow at all,* not even saliva, without much difficulty and dread; she said it felt much swelled, and as if something were *fastened round it to choak her.* After swallowing a little water the pain in the chest was worse than it ever had been before. Leeches were applied at the recommendation

of the attending apothecary, without relief. He examined the throat, but could discover neither swelling nor inflammation; and he thought the attack entirely spasmodic. A spirituous embrocation which I had formerly prescribed, was applied with some benefit, and laudanum was administered with some good effect *She took five drops of the Hydro-cyanic Acid, at once, in order to allay the great irritation that prevailed for several days, and she is of opinion that the acid taken three times a day, five drops each dose, was the only thing that removed the pain, and that a less quantity would not have attained that end.*" The above is extracted, almost, *verbatim* from a letter I received respecting her, a few days back; and it is gratifying to be able to add, in the words of the patient herself, that "she really thinks the acid a most valuable and powerful medicine, without which she should have been distracted during the late attack."

The two following cases of neuralgia, and threatening epilepsy, in which the Hydro-cyanic Acid has been administered with great benefit, are from Mr. Pitt, a practitioner at Brighton, whom I have had occasion to name before.

Case LXVI.—January 16.—"Mrs. H——, a middle aged woman, of an irritable habit, and who had been for several months past subject to an anomalous affection of her head, attacking her periodically, and continuing with all the violent symptoms of severe neuralgia, lasting from four to six days; applied to me on the day above mentioned. When I first saw her, she was labouring under the most excruciating pain in the head, and muscles of the neck, her pulse were 110, hot, dry skin, though not much thirst, her bowels not constipated, her pains at the time I first saw her were almost without remission. I prescribed the Prussic Acid for her, in the proportion of three drops every four hours, in distilled water. The

first dose produced a sensible influence upon her feelings, the second quieted her pulse, and in truth harmonized her whole frame. I continued the medicine two days, enjoining an occasional aperient, which I should observe, was of a much milder nature than she had been accustomed to take, when the patient became restored. She has twice been attacked in a similar way, but has always been able to obtain almost instantaneous relief, by the exhibition of the Prussic Acid." *

CASE LXVII. — "Mr. P——, a Painter and Glazier, a very nervous subject for several years past, has been under my occasional direction. Among a great variety of distressing feelings, he has been occasionally subject to a paroxysm of extreme agitation seemingly about to threaten an attack of epilepsy. Four drops of Prussic Acid in distilled water were given

* "I procure my Prussic Acid from Garden's in Oxford Street."

him, upon the approach of these symptoms, which have generally warned him of this attack; and invariably with good effect."

CASE LXVIII.—"An instance of nocturnal *spermorrhœa*, attended with symptoms of high nervous excitement, has been stated to me by Dr. Clarke Abel, of Brighton, in which the Prussic Acid was ordered by that Physician, in the dose of four drops, with directions that it should be quickly repeated, if necessary.

Spermorrhœa hæc originem a venere nimia trahebat. Antecessis somniis libidinosis, post seminis effluvium, angores, quot noctibus, instabant, irritatio maxuma, horroresque. The first dose of the acid always succeeded. Dr. Abel states, "It is unnecessary, perhaps, to remark, that the acid was in this case, merely, a palliative, the *cure being effected* by the use of nitrate of silver."

In affections of the stomach, the evidence in

favour of the Hydro-cyanic Acid is now so strong, that I need not add my own to it. I shall simply quote a case from my own register at the Westminster General Dispensary, amongst various others which I have had occasion to treat, both in public and private practice;* to which I shall add another from the American Recorder, one from Mr. Thomson, and two from Dr. Elliotson's recent publication. These will be more than sufficient to persuade the incredulous, and satisfy the believers.

CASE LXIX.—Ann Grylls, aged 38 years, residing in Chandos Street, on her first application to me, March 20, 1820, complained of acute pain at the pit of her stomach, ac-

* In the first part of the present work, I promised to detail a case of stomach complaint, in which that viscus was found to be ulcerated on examination after death. But feelings of regard for some individuals interested in that case, induce me to decline the task. I was only called-in five days before death, and administered the Prussic Acid as a palliative of pain only with success. Mr. Copland Hutchison kindly assisted me in the examination afterwards; and the preparation is now in my possession.

companied by a similar affection of the loins and groin; with, at times, a sensation of dragging and bearing down within the cavity of the pelvis. She was generally costive—sick at the stomach—suffered much from head ach—had a sallow look, and was greatly emaciated. The tongue was furred and brownish—the gums swelled and sore to the touch—the skin dry and hot, particularly that of the palms of the hands. She was subject to flatulency and palpitations, and appeared much dejected. The pulse was quick and intermittent; and I found that she had leucorrhœa to a great degree. On examination, the uterus appeared in its natural position, the cervix greatly distended; the os externum not firmly closed, and rather painful to the touch, giving passage to a copious discharge of white curdy matter. I desired her to take an emetic the next morning; and prescribed some powders of calomel and jalap to be taken every night. The Prussic Acid was ordered at the same time in the dose of two drops, four

times a day in cinnamon water. The emetic brought away a large quantity of bile; and the alvine secretions for the next week were deeply charged with the same fluid. The pain at the pit of the stomach diminished on taking the second dose of the acid, and by the end of the third day was completely removed. The patient felt great weakness still, but was more cheerful and less desponding. I recommended the continuation of the same plan, which produced in another week, a corresponding amelioration. A proper treatment, consisting chiefly of topical remedies, was followed at the same time against the uterine discharge; but the latter did not seem to diminish much, nor the soreness of the parts to give way, until after her general health, under the continued use of the Prussic Acid, and by means of the mercurial treatment, had greatly improved; as if the former had been originally dependent upon the latter. To be brief, on the 15th of April, our patient was discharged cured—the leucorrhœa

alone remaining, but in a very trifling degree, colourless, and of a mucous consistence only.

This case, which in my Register at the Westminster General Dispensary, is entered by one of my pupils, thus "Organic disease of the uterus? Dispepsia?" agreeably to my directions —and others relating to the latter complaint only, were not treated with, and cured by, the Prussic Acid in consequence *of a mistake*;* but from a previous knowledge, (derived chiefly from the authorities that have been already mentioned on this particular subject,) that the Prussic Acid is often of great service in dispeptic complaints. This practice was carried on long before the appearance of the "numerous cases illustrative of the efficacy of the Hydro-cyanic Acid in affections of the stomach." It will not be superfluous to add, that the evidence in favour of the Prussic Acid in cases of stomach

* See Dr. Elliotson's pamphlet, page 3 and 4, and a note in Mr. A. T. Thomson's letter,

and bowel complaints, and particularly cardialgia, was long before made known to the public by Bremer of Berlin, who employed the water distilled from the bark of the *prunus padus*, (which he had previously shewn to contain Prussic Acid for its active principle) in those complaints, and relieved *himself* from cardialgia by the use of the same remedy.

The case from the American recorder, will be found in the second volume of that journal at page 472.

CASE LXX.—" A country woman, aged 73 years, who had never suffered any serious disease, was attacked (after her return from Philadelphia, where she had taken some soup) with a most violent spasmodic colic. She threw up what she had eaten, together with some bilious matter, without receiving any alleviation. On the contrary, the pains became constantly more severe. She vomited up every thing which was given her. Her situation at

last becoming extremely alarming, she was ordered to take a table spoonful of a potion, composed of five ounces of emulsion, and one of laurel-water, every hour. She had hardly taken a few doses, when the vomiting diminished, and soon ceased altogether. Next day she was quite well again.

CASE LXXI.—"T. R——, Esq. of a slender form, and gouty diathesis, had long been afflicted with dyspepsia, attended with a peculiar hot sensation of the tongue, which was supposed to depend on acidity of the stomach. The remedies he had employed, and the regimen to which he had confined himself, for some time past, had materially improved the power of the digestive organs; so much so, that he declined the further use of medicines, and considered his health as good as it could be expected to be, in an individual beyond the middle age of life. Notwithstanding this improvement, however, the heat of tongue still remain-

ed; when he was attacked with the epidemic catarrhal cough, already mentioned. He took the acid, in doses of two minims repeated every second hour, and with the cough, the heat of the tongue also rapidly abated and altogether left him in less than four days. I have not heard that the latter symptom has returned."

"As the state of the stomach affects the tongue by sympathy, perhaps the unexpected effect of the acid in this instance, may be ascribed to its reducing the morbid irritability of the secreting surface of the stomach, thereby enabling the juices of the organ to be more slowly secreted and of a more healthy character. We know that opium and some other narcotics produce temporary relief in cardialgia, arising from acidity; but after their first effect is over, the morbid irritability of the organ not only returns but is augmented; if, therefore, the Prussic Acid produces a more permanent and equally beneficial effect, its importance, as an adjunct to tonics

in the treatment of dyspeptic affections, must be obvious."*

From the numerous cases published by Dr. Elliotson, I select, at random, the two following, referring my readers to his work for more information on the subject.

CASE LXXII.—"March 17, 1820—A young woman aged 19, has laboured five weeks (and frequently, indeed, before) under a knawing pain at the pit of the stomach, especially on motion. She is hoarse, has a dry, tight cough, and the bowels are costive. To take *two thirds* of a minim of the Hydro-cyanic Acid three times a day, and the dose to be increased gradually to two minims and a half. On the 24th very much better in the stomach. The cough also diminished. To continue as before. On the 31st quite well. Still to continue the medicine."

CASE LXXIII.—"April 1, 1820.—Rebecca

* From Mr. Thomson, inserted in the edition of 1819.

Mann, aged 26, ill occasionally for six years; extremely so now for three weeks. Flatulence; a feeling as if a ball was sticking in the throat; pain at the pit of the stomach, swelling of it after eating; tremor, lowness of spirits, and vertigo. One minim of the Hydro-cyanic Acid three times a day for two days—then two minims three times a day for two days also; and finally, three minims three times a day. On the 13th very much better. A slight pain to day from having no more medicine; thinks the lowness of spirits and trembling are worse every third day. The bowels costive. To continue as before, and to take occasionally some cathartic extract."

SECTION NINTH.

ORGANIC DISEASES—TOPICAL APPLICATION OF THE PRUSSIC ACID.

I had originally intended to have laid before the public, the result of my own practice, as well as of that of several other medical gentlemen, on these two subjects; but various reasons, and the suggestions of friends have since induced me to wave that intention altogether for the present, and to be satisfied with what I have already said respecting the use of the Prussic Acid in organic affections in the first part of this treatise. One of my motives for deferring what further I have to say respecting them, to another opportunity, is, that I am at this moment engaged in giving the acid a very extensive trial in affections of the uterus and vagina—scirrhus of thesto mach—angina pectoris—and cutaneous complaints; and that, although in a few well defined cases of this kind, the Hydro-cyanic Acid has succeeded to the completion of my best wishes; still I think

it necessary to possess a much greater store of information respecting this application of the acid, before I venture to communicate any thing positive to the public.

I beg leave here, to insert a letter I have recently received from my friend Mr. A. T. Thomson, whom I have so often quoted in the preceding pages, giving an account of his further experience, with respect to the internal use of the Hydro-cyanic Acid in different complaints, since the publication of the former edition of this work. Mr. Thomson enjoying the opportunities of a very extensive and select practice; and being known to the medical profession for his zeal in the promotion of science, as well as medicine; was more particularly solicited by me to take notes of, and communicate to me, any further observations he might make on the present highly interesting and important question; and it gives me great pleasure to be able to add his testimony to that of so many respectable practitioners, in

favour of this new addition to the Materia Medica.

Mr. Thomson's letter is in answer to an application I made to him in July last, with a view to ascertain the present state of health of one of his patients, who had taken the Prussic Acid, and whose case has been inserted in the former and present edition. It is as follows:

" My dear Sir,

" In answer to your enquiry, ' whether I have had occasion to make any further observations upon the case of Miss G.' which you published in the first edition of your work, on the medicinal properties of Hydrocyanic Acid, I am gratified in being able to inform you, that my expectations of the benefit, which the administration of the acid, in that instance, promised, have been fully realized. By referring to my former account of the case, you will perceive that I anticipated a return of the symptoms, whenever the weather should become severe: such actually happened, and

the attack has been repeated more than once, owing in a great measure to the too hastily adopted opinion of the patient, that she was completely recovered, and had, consequently, little occasion for farther caution or restraint. But the paroxysms, on each recurrence, have been moderated and speedily terminated by the administration of the acid; and Miss G. is now enabled to enjoy the society of her friends, and is, indeed, so comfortable, as to give up every idea of a residence in a tropical climate, which, before she commenced the use of the acid, she was induced to regard as the only remedy to which she could look with confidence. It is but just, however, to state my belief, that the morbid condition of the mucous membrane of the trachea still continues to a certain extent; although the distressing effects, that, almost invariably, result from the increased irritability of the general system, occasioned by this diseased state of that membrane, is so much subdued by the occasional employment of

the Hydro-cyanic Acid, as to admit the anticipation of a perfect cure being ultimately effected."

"My further experience has, also, confirmed my opinion of the efficacy of this acid, in spasmodic coughs: but, in hooping cough, I certainly have not given it such a trial as can authorize me to advance any decided opinion of its powers in that disease. I have had, however, an opportunity of witnessing its efficacy in a case of violent and very obstinate hiccough, which supervened an attack of hæmoptysis, and resisted every other means of relief for many days. The dose of the acid was one minim only, in a fluid ounce of water, with half a drachm of syrup of saffron; and repeated at intervals of three hours. Six doses were taken, and the spasms very materially relieved; but the depression of strength, which the acid occasioned, was too alarming to permit the use of it to be continued, so as to ascertain its real value as a remedy in this distressing spasmodic affection of the diaphragm. If I

may be allowed to offer my opinion from observing its effects in a solitary case, I should say that, when the strength of the patient will admit of the employment of the Prussic Acid to remove obstinate hiccough, the intervals of its exhibition should be as short as possible; in order to break the morbid habit, which always appears, in my view of the symptom, to be as likely to keep up the attack, as the continued operation of the exciting causes, whatever these may be, from which it originates. Reasoning from the efficacy of the acid in diseases connected with increased irritability, I was induced to try it in a case of tic douloureux, but although it was exhibited in large doses, frequently repeated, and also applied by means of compresses, as a lotion to the affected part, in the proportion of two fluid drachms to six fluid ounces of distilled water, yet, scarcely any mitigation of the sufferings of the patient followed.*

* It may not be uninteresting to the profession, to know the remedy which finally subdued this very violent attack of tic. The

In some cutaneous diseases, particularly Acne *indurata* and *rosacea*, I have found it ex-

patient was a young lady, under fifteen years of age, of a sanguine temperament and quick parts. She had suffered an attack of the disease about a year before, and was not relieved for many months, although it was less severe than that for which I was requested to see her. The pain, which was most excruciating, and returned every three or four minutes, was situated under the chin, about an inch backwards from the symphysis of the lower jaw; and apparently in the course of the branch of the ninth pair of nerves that supplies the genio-hyoideus muscle. A small knot or hardness could be felt externally, and this was enlarged during every paroxysm. The throat was partially affected, and deglutition somewhat impeded, as well as speech. The screams of the patient, when the paroxysm returned, and the writhings which the torture of the pain occasioned, were most heart-rending to those who witnessed them.

Finding that every remedy with which I was acquainted had failed, I resolved to try the effect of a powerful mental impression; and with this in view, made enquiry of the lady, under whose charge she was at school, if she knew of any strong antipathies of her pupil. She informed me she had an unconquerable dislike to a dog which was in the house; and having obtained this information, and acquainted the governess with my intention, I proceeded to the room of my little patient, and informed her with as much gravity of countenance as I could command, that the only other remedy I had in store for her disease, was one which I meant should instantly be resorted to; and that it consisted in rubbing the affected part with the back of the dog. The effect

tremely useful as an external application; and it is not improbable, that to its presence, as it exists in bitter almonds, the efficacious effects which have been occasionally experienced from the use of Gowland's lotion in these eruptions, is to be attributed."

"I have not given it a fair trial in Phthisis, for the result of the few cases in which I have employed it, were not such as would induce me to place much confidence in its remedial powers in that disease, when it is at all advanced. I have seen enough of it, however,

was most extraordinary—her face became as palid as that of a corpse, large drops of sweat formed on the forehead, and the girl appeared passing into the most alarming syncope. She, however, gradually recovered; and from that moment, no other paroxysm of the tic was experienced until eighteen months afterwards, when the disease was arrested on the second day of its attack, by suddenly taking her out of bed, and hurrying her into a shower bath. The reason the dog was not again had recourse to was, that she had very imprudently been informed of the motive which had induced me to propose him to be employed in the former instance. I cannot attempt to give the rationale of this practice; but I leave the facts in the hands of the profession.

to be satisfied that it may do much good if the opportunity occurs of giving it in the early stage of the disease, even when there is a predisposition to its tubercular form. The following cases were of the former description:"

CASE LXXIV.—"Mr. O——, residing in Exeter Street, Sloane Street, æt. 28, of a melancholy temperament and sedentary habits, had laboured for many months under symptoms of pulmonary consumption, before I was requested to see him, which was on the morning of the 9th of April, 1819. The disease was then in its advanced stage; the cough was almost incessant; and the expectoration copious and purulent, but not streaked with blood. The patient was much emaciated with hectic fever, and diarrhœa; his nights were restless, and his morning perspirations profuse. In this state of the disease I did not anticipate any permanent advantage from the employment of the Hydro-cyanic Acid; but as the administra-

tion of any other remedy was likely to prove equally unavailing, I resolved to give it a trial, and accordingly ordered it for him in the following form:

℞. Acidi Prussici m. xij.
Pulveris Granati corticis ʒj.
Aquæ distillatæ fʒ vj.
Sacchari albi ℈ ij.
Fiat mistura, cujus chochlearе amplum omne bihorio, sumatur.

Six grains of the extract of poppies were also ordered to be taken at bed time. On the following day he thought himself better. The bowels were certainly less disturbed, and the habit was, apparently, altogether more calm; but after a few days the symptoms again retrograded; and as I became apprehensive that a disposition to faint, which had taken place, might in some measure be attributed to the acid, the intervals between the doses were extended to three hours; and the pomegranate powder, also, in the composition of the mixture, was omitted, and two drachms of catechu were added in its

stead. As no beneficial effects, however, resulted from this change, and the faintings continued, the mixture was taken for two days only; after which, the acid and every other medicine, except the extract of poppy, were discontinued. In ten days afterwards the patient fell a victim to the disease."

CASE LXXV.—" Richard Rattenbury, æt. 18, residing in little Cadogan Place, of a scrofulous habit, and affected with glandular swellings, was seized with violent hæmoptysis, in the beginning of July 1819. The superacetate of lead, in pills, and the diluted sulphuric acid, exhibited in the infusion of roses, gradually stopped the hæmorrhage; but a cough supervened, and in ten days all the symptoms of Phthisis shewed themselves. As the disease was in its commencement, I conceived the case to be one which was likely to benefited by the Prussic Acid; and, accordingly ordered him to take this mixture.

℞. Acidi Prussici m. xij.
Infusi Calumbæ f℥ vj.
Syrupi Papaveris f℥ ij.
M. ut fiat Mistura, cujus cochlearia ampla ij. 4tis horis sumantur.

"For some days he continued to improve; the hectic fever was nearly subdued, the morning sweats abated, the expectoration lessened in quantity, and the sputa improved in character; but, as the cough was still very troublesome, ten drops of the *black drop* were added to the mixture; and in this form it was taken with evident advantage for nine days; when little progress towards recovery being perceptible to the parents of the lad, a letter of admission, as an out of door patient at St. George's Hospital, was obtained for him, and I saw no more of him until the 24th of the month. On my assistance being again solicited, I found every alarming symptom so much increased, as to afford scarcely any prospect of utility from recurring to the acid: it was however ordered and persisted until the 30th of August, when he died."

"I have little hesitation in saying, that had the acid been fairly tried in this case, the progress of the disease might, at least, have been arrested; as all the untoward symptoms were abated, while its use was persisted in, prior to the 17th; but so much ground was lost in the interval of five days which followed, as to render my endeavours to recover even the former state of the patient perfectly hopeless. The remedy was therefore ordered, rather to satisfy the wishes of the sufferer, whose memory dwelt on the benefit which he had already experienced from it, than with any idea of its utility."

CASE LXXVI.—"Miss N——, æt 16, of a fair complexion, light brown hair, and a delicate form of body, was attacked, early in June, with an alarming spitting of blood. She was then at a boarding school in Cadogan Place, where she remained until every danger of a return of the hæmorrhage had subsided, when

she was removed to her father's house in Kennington Lane. I did not then see her for two weeks after her removal; when, being again requested to visit her, I found her labouring under evident symptoms of Phthisis; and was informed by her father, that her mother and one of her sisters had died of that disease. The symptoms were those which characterize the more acute form of the disease; frequent cough, attended with copious purulent expectoration; hectic fever with morning sweats, great emaciation, a dry, harsh, hot skin; the pulse 130, small and wiry, and the tongue of a bright scarlet hue. The bowels were, however, regular, and the evacuations nearly natural in appearance. On the 23d of July, she was ordered to take the following draught:

℞. Acidi Prussici m. iij.
Extracti Sarsæparillæ ℈j.
Infusi Cinchonæ f℥xij.—Misce
ut fiat Haustus 4ta. quaque horâ sumendus.

"On the 25th, when I again saw her, I was most agreeably surprized to perceive the effects

which had followed the use of the acid; the cough and expectoration were very much abated, the skin cool, the respiration much freer, the pulse under 100, and the countenance free from anxiety. She, however, complained so much of faintness, which had followed the taking of her medicine, that I reduced the dose to one minim. This was continued four days; but, as the untoward symptoms began again to shew themselves, the dose was then increased to two minims. The same benefit, however, did not follow as on the first administration of the acid; and, on the strength being evidently much weakened, the dose was again reduced to one minim. To counteract, also, a disposition to diarrhœa, fifteen minims of the tincture of catechu were substituted for the extract of sarsaparilla. She persisted in the use of the acid until the 4th of August, when the ruptured vessel having again given way, to use the words of her father; "she on a sudden brought off a quantity of blood, and in two minutes from that time expired."

"The terminations of these cases appear, at first sight, rather to militate against the value of the Hydro-cyanic Acid, as a remedy in Phthisis; but, in the two latter, although there was an hereditary predisposition to tubercular consumption, yet, its effects were so decidedly beneficial, as to induce me to believe that, when it can be employed in an early stage, the progress of the disease may be arrested, so as to enable the patient, with even a moderate degree of care, to prolong life, perhaps to its ordinary term. Every individual predisposed to Phthisis, possesses great nervous irritability of habit, and it is this temperament which hurries on the symptoms, after the disease has made its attack. By allaying this constitutional irritability, therefore, and nothing is more likely to do so than the judicious administration of a sedative so certain in its effects as the Hydrocyanic Acid, there is every reason to hope, in cases where no organic lesion has taken place, that this formidable disease may yet be brought under the controul of art."

"In the remarks on the fourth case, related in my former letter, you will perceive I was led, incidentally, to believe that the Hydrocyanic Acid, might be employed with advantage in Dyspepsia, and other affections of the stomach connected with a morbid state of its secreted juices. At the period of the publication of that letter, the following case and several others were under treatment; but as the results were then still problematical, they were not mentioned in that communication. I have since had many opportunities of verifying the powers of the acid in relieving those affections of the stomach in which alkalies and bitters are usually prescribed; and from its effects I am now inclined to ascribe the benefit which sometimes follow the use of alkaline remedies in these complaints, rather to the well-known power they possess of diminishing morbid irritability when applied to secreting surfaces, "thereby, enabling the juices of the organ to be more slowly secreted, and consequently of a

more healthy character," than to their chemical property of neutralizing the superabundant acid which is always generated in Dyspepsia."*

* "Since writing the above, I was much surprised in reading the following sentence in a work of Dr. John Elliotson, recently published, entitled, *Numerous cases illustrative of the efficacy of the Hydro-cyanic or Prussic Acid, in affections of the stomach, &c.* 8vo. 1820. "I began to try the powers of the medicine in the pectoral diseases, for which it was recommended, and by mere accident, in fact, by a mistake, discovered in March last year, its extraordinary efficacy in derangements of the stomach." My surprise at this sentence arose from the fact, which Dr. Elliotson himself relates, that he did not begin to employ the Prussic Acid as a remedy, until after he had read your work on the subject; for, as in that work, in a letter of mine addressed to you, and dated the 20th of February, 1819, the effects of this acid in derangement of the stomach is not only detailed in a case, but the manner in which it produced the benefit endeavoured to be explained; how could the doctor, if he had really read your work not know, until an accident pointed it out to him, that the Hydrocyanic Acid might prove useful in dyspeptic affections? How could he, also, write the following note, p. 22 of his work. "In Dr. Granville's work, Mr. A. T. Thomson relates a case of heat of the tongue cured by the Prussic Acid," and yet permit himself to say that it was accident, which suggested to him the use of this acid in derangements of the stomach? I call upon Dr. Elliotson to answer these questions, and leave his professsional brethren to pass sentence on his liberality."

"I think it unnecessary to detail more than one of the cases of this kind in which I have given the acid, as the practice was nearly the same in all, with the exception of the employment of purgatives being more requisite in some of them than in others. I may, however, here mention, that in the case of Mr. R.—— the dyspeptic symptoms, marked by the heat of tongue, have been again relieved as rapidly as at first, by a repetition of the acid: and I am now administering it, with equal success, to a lady upwards of eighty years of age, for the removal of cardialgia, consequent to a violent pneumonic attack from which she has just recovered, in which the heat of tongue has proved a very distressing symptom."

CASE LXXVII.—"Mrs. S——, the wife of the Rev. Mr. S——, æt. twenty-five years, of a delicate, slender habit, the mother of three children, had long suffered from dyspepsia. The chief symptoms in her case were,—a sense of

fulness of the præcordia, which impeded respiration, and brought on palpitation of the heart to a distressing degree; flushing of the face, acid eructations, chopping and soreness of the tongue, and continual thirst. Her spirits were also occasionally much depressed, and the least fatigue produced a disposition to fainting. As she had been long under medical treatment, and had taken all the ordinary remedies for such symptoms, without any permanent benefit, I resolved to try the powers of the Hydro-cyanic Acid, having recently witnessed its beneficial effects in the case of Mr. R.——, and therefore on the 28th of January, 1819, she commenced the use of the following draught.

℞. Acidi Prussici mj.
Infusi Cascarillæ f3xj.
Syrupi Croci f3j.
M. ut fiat Haustus bis quotidie sumendus.

"In a very few days she was much better: to use her own expressions, she was less nervous, could take more exercise, and had scarcely had

the palpitation since the second day after she commenced taking the draught. The dose of the acid was now increased to two minims, and, in this dose, it was continued until the 1st of March; when the patient, finding she was better than she had been for many years, was directed to leave off all medicine, and to go into the country to recover her strength."

"Such, my dear Sir, are the results of my further experience relative to the powers of the Hydro-cyanic Acid on the animal œconomy. It is, in my humble opinion, a most powerful and direct sedative, and cannot fail of proving, in the hands of judicious and scientific practitioners, a remedy of the greatest value. Some of the failures which have attended its employment, are no doubt to be attributed to those hidden causes, which every medical man cannot avoid observing, with regret, set all his efforts daily at defiance; but many of them must also be attributed to the misapplication of the remedy. As it is not the instrument of the musician, but

the skill of the master who touches it, which awakens the soul of melody, and chains the intellect captive to the magic power of sound; so it is not the remedy, but the judgment with which it is prescribed, which enables medicine to triumph over disease."

"Believe me, my dear Sir,

Yours' most truly,

"ANTHONY TODD THOMSON."

16*th of October*, 1820.

As one of the principal objects of the present work, is to shew the great advantage which will accrue to the practice of medicine from the employment of the Hydro-cyanic Acid in pulmonary consumption, I have deemed it essential to insert, before the conclusion of the treatise, two recent instances of that disease *cured* by the Prussic Acid; one of which has been communicated, while the other has occurred, to me since the printing of the preceding sheets. Both cases are remarkable for the distinct character

of the symptoms attending the complaint, leaving not a vestige of doubt of its being pulmonary consumption; and also because of their having fallen at the same time under the notice of other medical gentlemen well known to the profession. These instances of the power of the Hydro-cyanic Acid, added to the many brought forward in another part of this treatise, will materially contribute to uphold the propositions contained in it; and confirm the truth of Mr. Thomson's assertion, that *consumption may, by the timely and judicious administration of the Hydro-cyanic Acid, be brought under the control of art.*

For the first of the two following cases I am indebted to Mr. Plumbe the attending practitioner, who sent it to me at the request of my kind friend, Mr. Ogle of Great Russel Street; and it is given in Mr. Plumbe's own words. The second has occurred in my private practice, and I have received an unqualified permission to publish both.

CASE LXXVIII.—" ——— Bayliss, aged about 30, her occupation that of a nurse in a family of respectability, had been labouring under symptoms of incipient phthisis since April last. In May she first began to take medicine, and from this period she had been successively taking (singly or in combination with each other) digitalis, squills, and all the usual remedies, without any benefit beyond a temporary alleviation of particular symptoms. Blisters had been applied, but the state of the pulse had not appeared at any period to require abstraction of blood. The rapidly increasing debility had given occasion to the use of the Conf. Arom. with bitter tonic infusions in combination with the above medicines."

" On the 18th of July, when the Hydrocyanic Acid was first prescribed, the state of exhaustion of the patient, with the very copious expectoration of pus, seemed to warrant the opinion that she could not long survive. Her cough almost constantly distressing her, she

used to get but little sleep; and that only in the early part of the night, and much disturbed. Towards morning the cough became incessant —as the day advanced, it diminished in violence, and left her just strength enough to sit up for two or three hours. The perspirations during the night copious—the quantity of pure pus expectorated about four or five ounces in twenty-four hours."

"In this state of things, the acid was prescribed by Dr. Scudamore, according to the following formula.

℞. Acidi Hydro-cyanici m. vj.
Decoct. Camphoræ.
Mist. Amygdalæ aa f℥ iij.
Gutt. nigr. n. xij.
Syrupi Simp. f℥j.

Capt. 4^{tam}. partem 6^{tis}. horis.

Two days afterwards, the patient was removed to a healthy situation in the neighbourhood of Islington, and the quantity of acid taken, was increased two minims every twenty-four hours."

"Previous to her removal, her cough had

become less troublesome. I saw her at Islington on the 25th, when the account she gave of herself was as follows. Her sleep, sound during the greatest part of the night; towards morning the cough becomes troublesome; she does not however cough up more than half the hitherto usual quantity of pus. Her appetite is improved, and her strength increased—her night perspirations have nearly left her, and there is evidently a very great general improvement."

"The patient continued to take the acid with the daily increase above mentioned, in combination with the bark, black drop, &c. as before, and I saw her again three days after. On this visit I found a beneficial change, still more surprizing than on the preceding. She had indulged an improving appetite, to what would have been considered by many, an imprudent extent. No mischief, however, had occurred—the purulent expectoration was still more diminished, and the cough much less

troublesome; she evidently recovered strength rapidly."

"In my succeeding visits, I was gratified by witnessing a regularly proceeding and rapid improvement in all her symptoms. At the end of a month, she thought herself well enough to proceed into the country, when she called on me. I had not seen her during the preceding week, and I now found her with no symptom of her former disease, but some remains of debility. To conclude, she again called on me on her return from thence, about a fortnight since, in a state of perfect health, not the slightest symptom of disease remaining."

"I requested my patient to call on Mr. Scudamore, as I felt persuaded that the very favorable termination of the case, could not fail to make it interesting to him."

"J. PLUMBE,"

"65, *Great Russell Street,*
Bloomsbury,
14th October."

"P. S. The quantity of acid taken by the

above patient for a dose, did not, at the period of her discontinuing it, exceed five minims."*

CASE LXXIX.—Miss Munn, aged 17, of a nervous temperament, with dark hair and regular features, the daughter of healthy parents, and herself enjoying, generally, perfect health; was attacked, towards the latter end of April, 1820, with every symptom of catarrh, difficulty of breathing, pain in the chest, fever, and restlessness, capable of alarming her relations. Her mother having occasion to see Mr. Clarke

* In addition to the above case, I may quote an extract of Mr. Plumbe's note to me, accompanying it. It is as follows:—"Mr. P. has notes of another case, treated with the acid, in the Infirmary—that of a female, who within the space of a month recovered from a state of extreme emaciation, and became sufficiently strong to resume her occupation. Unfortunately, all traces have been lost of her since; but it is to be presumed, from her not returning, that she continued to improve. Mr. P. has endeavoured to find her, with the intention of ascertaining her present condition, but without success."

"There are two other cases now submitting to the treatment by the same medicine in the Infirmary, the remarks on which will be much at Dr. G.'s service when complete."

of Saville Row, obtained from that gentleman a prescription, in the use of which the patient persisted for some days, without any sensible amelioration of her complaint. She, indeed, became considerably worse at last; when to the pain in the chest and slight febrile rigors were added, a considerable expectoration of thick purulent matter, with regular paroxysms of fever, profuse morning perspirations, head-ach, sickness, cough, and a general wasting of the body. In this state she was taken to Dr. Batty, who ordered her to be bled, and prescribed appropriate medicines, declaring her at the same time to be in a consumptive state, and therefore beyond the chance of recovery. To this decision, the afflicted parents endeavoured to reconcile their own and the poor girl's feelings; while every succeeding week seemed to confirm the correctness of that physician's opinion. On the 26th of June, Miss M—— was brought to me for advice, when she presented the following symptoms, which I copy from my note book.

A general emaciation to a very great degree—eyes sunk and without animation, marked by an under and broad streak of a leaden hue—nose pointed and sharp — the alæ playing strongly and quickly during respiration, which was heavy, difficult, and accompanied by a considerable wheezing noise. Soreness and a sense of perpetual tickling along the wind-pipe—pain deep seated in both sides of the chest—great tenderness on pressure at the pit of the stomach —dry and arid skin—foul tongue—hot breath—pulse 115, small and wiry—excessive debility—spirits much dejected, the patient bursting into tears at each question put to her on the subject of her complaint. The mother reported, moreover, that she sleeps for a few minutes, only, at a time, owing to an incessant hard cough—that she wakes in the morning bathed in sweat—expectorates a large quantity of a thick grumous matter in the course of the day—that at night she is attacked by a regular paroxysm of fever, when she sinks on her bed powerless and

exhausted, to rise next morning to a repetition of every symptom. This picture offered nothing very promising. I concealed my impressions from the alarmed patient, and cheered both her and her mother with the prospect of some amelioration from the use of the Hydro-cyanic Acid, the nature of which medicine, had, some how or other, come to their knowledge. The form in which I prescribed it was that marked, No. 7; and additional instructions were given respecting every other part of the treatment, which it is needless to repeat in this place, as they differed but little from what is usually recommended in similar circumstances. The beneficial effects of the acid became visible almost immediately. At the end of the first week, the cough, and consequently the expectoration, had diminished greatly—sleep became prolonged and refreshing—the morning perspirations ceased—the pulse was reduced to 100 beats in a minute, and assumed a healthier character. The dose of the acid, which had been limited to a drop and

a half every three hours at first, was now increased to two, and she was desired to persist in it for another week. This she did with so much benefit, that the mother, considering her now as quite safe, discontinued the Prussic Acid, and merely attended to my instructions as to her general health. I saw the patient again in a fortnight, and the change which had then taken place in her appearance, seemed to be so favourable, that I could scarcely believe it to have been the work of so short a period. I enjoined great care and quiet, and ordered some tonic medicine—contenting myself with hearing from her from time to time. Towards the end of September last the accounts were, that she was enjoying perfect health, and had done so for several weeks before. Of the truth of this assertion, I had the means of satisfying myself in about a fortnight afterwards, when I found Miss M. free from every, even the most distant, symptom of complaint. It is proper to observe that Miss M. has not yet menstruated, and that she is small of her age.

SECTION TENTH.

MODE OF PRESCRIBING THE PRUSSIC ACID.

FORMULÆ.

In prescribing the Prussic or Medicinal Hydro-cyanic Acid, care should be taken not to associate it with substances which are known to decompose it, or which are decomposed by its action. In this respect the Medicinal Hydro-cyanic Acid is not singular; for it is a matter of the first importauce never to lose sight of the chemical affinities of the medicines we prescribe.

The Hydro-cyanic Acid is less soluble in water than in alcohol; and is not decomposed by any of the vegetable substances. It may, therefore, be given in vegetable infusions, and syrups may be added, if necessary.

It is decomposed by most of the oxydes usually employed in medicine, particularly by those of mercury, and antimony.

With alcaline and earthly solutions, the

Hydro-cyanic Acid readily combines, but its affinity to them is inconsiderable; for as the acid is very liable to decomposition, the constitution of the triple compounds it forms is easily subverted.

Magnesia is dissolved, but in small quantities, by the Hydro-cyanic Acid, and again soon precipitated.

With ammonia it forms a peculiar salt, which might be used with advantage as a medicine. In cases where the Prussic Acid has been given in too great a dose, ammonia has been suggested as the best means of neutralizing it; but on this subject I have two observations to make. The first, that the acid is so rapidly absorbed, when once taken, that little expectation can be formed of the ammonia finding it in the stomach: and the second, that when ammonia has been used *immediately* after taking the acid, in order to diminish the highly deleterious agency of a large quantity of it, the addition of the alkali did not seem to prevent the *effects* of the acid.

The affinity of this acid for alkalis is so weak, that even the carbonic acid displaces it from those combinations. Hence the Prussic Acid may be given in conjunction with the carbonate of potash, or soda; forming one of the most successful modes of prescribing it in cases of spasmodic and whooping-cough; and supplying the means of administering it in fevers under the form of an equally pleasant and elegant preparation.

The mercurial salts, in which the metal is only in a state of protoxidation, are decomposed by the Hydro-cyanic Acid, which combines with a portion of the metal, and forms a Hydro-cyanuret. Hence, in prescribing this acid where mercury is also indicated, as in Case XLIV. care should be taken, either that the mercurial preparation be any other than a protoxide of that metal, or that the Prussic Acid be given some hours after or before the other medicine.

Nitrate of silver throws down a white, and the oxycarbonate of iron a green, precipitate,

when acted upon by the Hydro-cyanic or Prussic Acid. These phenomena should be borne in mind, as these two salts are frequently prescribed as remedies.

Upon the greater part of the other salts the Hydro-cyanic Acid does not appear to possess any action. It is not known whether any and what action the other acids exert over it.

The Prussic Acid cannot be administred in combination with any of the sulphurets, which it has the property of decomposing.

Chlorine, when given in combination with the Prussic Acid, or immediately after it, disengages its hydrogen, and gives rise to a new compound—a combination of cyanogene and chlorine, called Chloro-cyanic Acid. As a solution of chlorine in water is frequently prescribed now, the above fact should not be lost sight of.

It is indispensably necessary to use no other than distilled water in all prescriptions having the Prussic Acid as one of their ingredients;

or decomposition of the salts contained in common water, and of the acid itself, will take place.

I have reason to think, that even under ordinary circumstances, the medicinal Hydro-cyanic Acid undergoes decomposition on being kept, especially when mixed with other medicines; in which case the resulting new compounds, or the elements of the acid (for I have not ascertained which) seem to act as irritating substances on the stomach; and to excite, at times, rather than depress, the nervous energy. I have often had occasion to remark, that a first and second dose of a mixture of which the Hydro-cyanic Acid formed a part, have acted as a sedative, and powerfully contributed to calm nervous irritability; while the third or fourth dose of it, taken in continuation, some hours afterwards, appeared not only to have lost that effect, but to have acquired the new property of producing excitement and irritability, and

of greatly increasing the velocity of the pulse. If, under such circumstances, the mixture was renewed and fresh acid used, the same quieting effects were produced, almost immediately, on the system, as in the first instance. This observation has induced me to recommend the distillation of a small quantity of the acid only, at a time; and it shews, moreover, the necessity of prescribing that medicine, in such doses only, as will last twenty-four hours and no longer, when combined with other substances.

At the suggestion of Professor Brera, from whom I have received several letters on the subject, within the last nine months, I have tried a combination of prussiate, or hydro-cyanate, of potash and tartaric acid, in the form of pills, as a new mode of prescribing the Prussic Acid, and one more exempt from the objections which lie against that medicine. Having ascertained, by previous experiments, that at the temperature of 92° the hydro-cyanate of potash is decom-

posed by the tartaric acid—that a tartrate of potash was formed—and Hydro-cyanic Acid given out, I proceeded to make use of the two salts in question, in cases where the latter medicine was indicated; and I think I may venture to say, with that success which the assurances of Counsellor Brera had led me to expect. At the same time I must not omit to state, that the effect was much more slowly produced than where the *free* Hydro-cyanic Acid has been employed; and that, therefore, in urgent cases, the latter only ought to be had recourse to. In slow chronic disorders, which are likely to be benefited by the daily and protracted use of the hydro-cyanic acid, the pills above mentioned will prove not only sufficient for the purpose, but even preferable. In a case of nephritic affection, with some obscure organic derangement of the left ovarium, in a lady now under my care; as well as in another of great uterine irritation and obstinate leucorrhœa, which had resisted the remedies prescribed by

two of the principal accoucheurs of the metropolis, I am at this moment using the pills with great success.

In the form of lozenges, the prussiate of potash and tartaric acid, with the *pâte de guimauve*, will prove useful in long and obstinate winter coughs.

The following are the formulæ under which I have prescribed the hydro-cyanic acid in the various complaints enumerated in this treatise:

No. 1.—℞. Decocti Lichenis f℥ viii.
—— Stipitum dulcamaræ f℥ iii.
Lactis vaccini f℥ v.
Acidi Hydrocyanici med. m. xvj.
Syrupi rosæ f℥ ss.
M. *Bibitur ad fluidunciam omni bihorio.*

No. 2.—℞. Misturæ amygdalarum f℥ viii.
Acidi Hydrocyanici med. m. x.
Syrupi tolutani f℥j.
M. *Cochleare unum maximum sumendum est tertia quâque horâ.*

No. 3.—℞. Misturæ camphoræ f℥ vi.
Tincturæ digitalis f℥ ss.
Acidi Hydrocyanici med. m. xii.
F. M. *Singulis cochlearibus, tertia, vel quarta quâque horâ, sumenda.*

No. 4.—℞. Potassæ subcarbonatis gr. xv.
Cocci cacti gr. viii.
Acidi Hydrocyanici med. m. x.
Aquæ stillatæ f℥ vj.
F. M. *Infantibus, per parva cochlearia mistura, dum urget tussis, propinatur: adultis vero, cochleare unum misturæ amplum, ter, vel quater de die, exhibetur.*

No. 5.—℞. Infusi corticis Aurantii f℥ v.
Acidi Hydrocyanici med. m. viii.
Syrupi de absinthiis f℥ i.
M. *Modus sumendi par est, et ut prædixi.*

No. 6.—℞. Decocti cinchonæ lancifoliæ f℥ ii
Acidi Hydrocyanici med. m. iij
Spiritûs juniperi comp: f℥ ss.
F. *Haustus ter quotidie sumendus.*

No. 7.—℞. Mucilaginis acaciæ f℥ iii.
Aquæ rosæ f℥ iiss.
Syrupi capilli veneris f℥ ii.
Acidi Hydrocyanici med. m. xvi.
F. M. L. A. *Cochleare unicum medium, si vis, singulis horis excipiatur*

No. 8.—℞. Sodæ carbonatis gr. xl.
Cocci cacti gr. v.
Aquæ stillatæ f℥ vj
Terantur optime & solutioni, per chartam bibulam diligenter colatæ, addantur:
Acidi Hydrocyanici med: m. xii.
Syrupi papaveris f℥ iiss.
F. M. L. A. *Cujus cochlearia iii. media, cum succi limonis recentioris, opportune edulcorati, f℥ ss. in impetu effervescentiæ, tertiis horis, hauriantur.*

No. 9.—℞. Aquæ cinnamomi f℥ x.
Syrupi Zingiberis f℥ iii.
Spirit: ætheris nitrici f℥ ss.
Acidi Hydrocyanici med: m. xx.
F. Potio. *Exiguis haustibus p. r. n. sumenda.*

No. 10.—℞. Siliqu: bignoniæ catalpæ cont. ℥ ss.
Ebulliantur in s. q: aquæ fontis.
Colaturæ f℥ viii. adde.
Oxymellis Scillæ f℥ i.
Acidi Hydrocyanici med. m. xx.
M. *Sumatur paulatim.*

No. 11.—℞. Emulsionis amygdal: amar: Octarium
Potassæ nitratis ℥ iii.
Acidi Hydrocyanici med. m. xx.
S. M. *Cochleatim hauriatur.*

No. 12.—℞. Potassæ Hydrocyanatis gr: vi.
Acidi Tartarici crystall: gr: iii.
Micæ panis q. s.
F. *Pilulæ ii. bis, vel ter de die, deglutiendæ.*
Deaurentur.

But the practical physician may change, at pleasure, the formula for the exhibition of the acid, combining it with any other article of the materia medica, which he may think indicated by the case under treatment, care being taken not to associate it with incompatible substances.

Where the prescriptions are sent to chemists or druggists who are strangers to the prescribing practitioner, the following caution should be added to the formula:

"Excipiantur preparationes, cum acido hydrocyanico, lagunculis vitreis, crystallino obturaculo munitis, et charta nigricante circumplexis."

The following is the Formula, inserted in the French Pharmacopœia, for the preparation of the Hydro-cyanic Acid, according to Vauquelin's method.

Ratio alia expeditior simpliciorque ad parandum Acidum Hydro-cyanicum a D. Vauquelin proposita.

℞ Cyanureti Hydragyri - - 100
Aquæ stillatæ - - - - - 800

Solvatur, levi calore, Cyanuretum, et per liquorem ita transmittatur Acidum Hydrosulfuricum, ut tantillum superet quod saturando sufficit. Coletur liquor, ut liberetur Sulfuretum Mercurii quod præceps actum est. Liquori colato inest Acidum Hydrocyanicum, cui admixtum est non nihil Acidi Hydrosulfurici. Hoc autem ipsum facilè auferetur, admixto plumbi sub-carbonate, ità ut hujus pulveris quantitas superet quod sufficit ad sorbendum Acidum Hydrosulfuricum. Liquor et pulvis unà identidem exagitentur, ac demùm percolentur. Habebitur tunc Acidum Hydrocyanicum aquâ solutum, et alienis omnino liberum, eâque densitate quâ Scheelianum ipsum.

CONCLUSIONS.

From the tenor of the evidence brought forward in the present Treatise, the author thinks himself warranted in asserting:

1st. That there are two varieties of the Hydrocyanic Acid.

a. The H. Acid of Gay-Lussac.

b. The Medicinal Hydro-cyanic Acid.

2d. That the former is a virulent poison; but cannot be kept more than a few hours without being decomposed, when it loses all its noxious properties.

3d. That the second variety, or what may be called the Medicinal Hydro-cyanic Acid, is a safe and highly useful preparation.

4th. That the Medicinal Hydro-cyanic Acid can be employed as the best palliative in cases of *confirmed* tubercular consumption: and that in some well authenticated instances, it appears to have effected a cure of that disorder.

5th. That it checks the progress of pulmonary consumption when in its *incipient* state.

6th. That in all cases of asthma, chronic catarrhs, and coughs of long standing, it has proved beneficial, where every other medicine had failed.

7th. That in dry and spasmodic coughs, and more especially in whooping-cough, the Medicinal Hydro-cyanic Acid has been used with great success.

8th. That in sympathetic cough, arising from chronic or incurable diseases, it has proved a valuable sedative, and succeeded in alleviating that distressing symptom.

9th. That in painful and difficult menstruation —in abortions followed by much pain—in floodings—and in spitting of blood, experience has shown it to be a safe and very efficient medicine.

10th. That in the treatment of nervous diseases and derangements of the stomach, the evidence in favour of the acid is most decisive.

11th. That it may be used with decided advantage in cases of sub-acute inflammation, when it will prevent the necessity of blood-letting; and that in complaints of a highly inflammatory nature, and fevers, it will be found a powerful auxiliary in restoring the standard of health.

12th. And finally, that there is every reason to believe that the Prussic Acid may, as a powerful sedative, be employed where all other narcotics cannot; and that, as such, it might be applied to the relief of high spasmodic action; excessive irritability; and acute pain; with decided advantage.

The author once more freely acknowledges that the medicine, the application of the benefits of which he has thus endeavoured to extend for the satisfaction of his medical brethren, has occasionally failed in producing the desired effects, even when properly applied; but he, at the same time, feels persuaded that such failure

cannot be urged as a sufficient reason for refusing it a becoming rank in the materia medica. Upon this point, the author wishes it to be clearly understood, that neither the positive denial of the virtues of the hydro-cyanic acid, coming from persons who are known to have on no occasion, or on a few occasions only, given a trial to that medicine—nor the cathedratic assertions of reviewers, with no rank in the profession—nor the taunting remarks of certain authors, who, having written on the same subject after him, strive to support their own new discoveries, by an affected disregard of what has been stated in the former edition of this work—will ever check him in his endeavours to propagate, far and wide, and to the best of his abilities, the adoption of a remedy, from which he thinks that the public will derive material benefit. He has no hesitation in declaring, that if, out of upwards of 400 patients of all descriptions, to whom he has prescribed the Hydro-cyanic Acid, (when every other medicine

had failed to give them relief, and after they had been abandoned to their fate,) he has succeeded in saving even a single life (and the cases contained in the preceding pages will more than bear him out in this statement) his efforts cannot be considered as fruitless. One or two instances have been reported to the author, where the acid is stated to have done harm to the patients; but so may every other, even the most innocuous, medicine, in the hands of the unskilful or the inconsiderate! Of what evil, and even fatal, consequences, particularly of late, has not that most simple, yet powerful, auxiliary to medicine—bleeding—been productive?—Is then such a measure to be excluded from the practice of Physic?

THE END.

Printed by J. Davy, 17, Queen Street, Seven Dials.

Lately published, by the same Author,

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